Earning by Degrees

Differences in the career outcomes of UK graduates

Dr Robert de Vries
December 2014

**Improving
social mobility
through education**

CONTENTS

FOREWORD

Not all degrees are created equal. At a time when the average student is graduating with around £44,000 of debt, it is more important than ever to recognise that fact.

In this important new report, we show the differences in earnings from different types of university in terms of starting salaries and earnings three and a half years after graduation. The differences are significant. It may not surprise anyone that an Oxbridge graduate on average commands a higher salary than someone from a newer university, but a £7,500 (42%) difference which only falls to just under £5,000 allowing for social background and prior attainment is a bigger difference than many might have expected. At £3,300, the salary advantage of Oxbridge graduates over even graduates from other elite universities is also significant.

While these differences may have been a feature of the system for some time, the fact is that most degrees cost the same to the graduate. Their debt repayments may be income-related, but there is no link between the cost of their degree and its later value in the labour market.

These findings stand alongside a number of other recent reports which highlight the challenges facing today's students. Our study with the Institute for Fiscal Studies in April showed that most graduates will be paying their loans off into their early 50s, with real interest of 3% over the RPI. Our most recent Independent Commission on Fees report showed that there remains a gap that is nearly ten-fold in access to the universities that deliver the highest paying jobs. And our recent research brief highlighted the extent to which today's graduates are expected to intern for free – paying £926 a month in the capital to fund themselves to get a foot on the professional ladder.

So there are important issues here for policymakers. We need to revisit the whole student funding issue, and find ways to reduce debts. We need to redouble efforts on access – the Sutton Trust supports over 3000 students a year on our summer schools and Pathways programmes – so that the resources universities spend on access and outreach are well targeted. And we need to look honestly at the extent to which some young people may be better earning and learning on good apprenticeships than on a degree course with poor prospects. We need many more high level apprenticeships for that to be a real option.

I'm very grateful to our Research Fellow, Dr Robert de Vries, for his work on this report. I have no doubt it will help inform the growing debate on the future funding of higher education.

Peter Lampl, Chairman, Sutton Trust

EXECUTIVE SUMMARY

- Despite a large (38%) and increasing proportion of the UK workforce holding a higher education qualification, university graduates still enjoy a large earnings advantage over non-graduates (estimated by previous studies as 28% for men and 53% for women).

- However, not all degrees are created equal. This report examines differences in early career outcomes between graduates depending on the university they attended and the subject they studied, using data from the Destinations of Leavers of Higher Education Survey (convened by the Higher Education Statistics Agency; HESA).[1]

- The results show that there are large variations in outcomes for graduates depending on their university and degree subject.

    - Graduates from Oxford and Cambridge enjoy starting salaries approximately £7,600 (42%) higher per year, on average, than graduates from post-1992 universities. They also earn starting salaries approximately £3,300 higher than graduates from other highly selective Sutton Trust 13 (ST13) universities.[2]

    - Differences by subject are even more substantial, with graduates from medicine and dentistry courses (the highest earning subject) earning starting salaries approximately £12,200 higher than those studying design and creative arts (the lowest earning subjects). Engineering and technology (the second highest earning subject) graduates earn on average £8,800 higher than design and creative arts graduates.

- The research also shows that large differences between universities remain even after accounting for graduates' demographic characteristics, social backgrounds, A-level grades, degree classes and their choice of subject:

    - All else being equal, the advantage of Oxbridge graduates over other ST13 universities in starting salary is approximately £2,455 per year (12%). Their salaries are also approximately £3,349 (17%) higher than those of graduates from other Sutton Trust 30 universities, £4,207 (22%) higher than those of graduates from -pre-92 universities and £4,760 per year (25%) higher than those of post-92 graduates.

    - Three and a half years after graduation, the salary advantage of Sutton Trust 13 (including Oxford and Cambridge) graduates over other ST30 graduates is approximately £1,629 per year (6%), and their advantage over graduates from pre- and post-92 universities is approximately £3,474 (13%) and £4,336 (17%), respectively.

    - There are similar differences in access to professional jobs. After six months the proportion of Oxbridge graduates in higher or lower level professional employment is 19 percentage points higher (at 74%) than the proportion from post-1992 universities. It is also 6 percentage points higher than the proportion from Sutton Trust 13 universities (68%), 10 percentage points higher than the proportion from the Sutton Trust 30 (64%), and 14 percentage points higher than the proportion from pre-1992 universities (60%).

---

[1] HESA Destination of Leavers survey 2012/13. HESA Destinations of Leavers Longitudinal survey 2008/09 Copyright Higher Education Statistics Agency Limited 2014. HESA cannot accept responsibility for any inferences or conclusions derived from the data by third parties.
[2] The Universities of Birmingham, Bristol, Cambridge, Durham, Edinburgh, Nottingham, Oxford, St Andrews, Warwick, and York, plus Imperial College London, LSE, and UCL

- o After 3.5 years, the proportion of graduates from Sutton Trust 13 and 30 universities in the highest level of professional employment was 13 percentage points higher (at 36%) than the proportion from post-92 institutions (23%), and six percentage points higher than the proportion from other pre-92 universities (30%)

- Accounting for graduate characteristics and which university they attended, differences by subject also remain large. Graduates from medicine and dentistry courses enjoy gross starting salaries around £8,000 per year (48%) higher, on average, than graduates from psychology, English, or design and creative arts courses.

- On average the top earning courses in terms of starting salary were medicine and dentistry; engineering and technology; economics; computer science; and education. The lowest earning courses were psychology; English; design and creative arts; biological sciences; and history and philosophy.

- This pattern was also largely repeated for earnings 3.5 years after graduation, and for the likelihood of entering professional employment (both at six months and 3.5 years), with graduates from medical courses and from science, technology, engineering and maths (STEM) courses having substantially better average outcomes than those from the arts, humanities, and social sciences.

- Examining the relationship between university degrees and social background showed that, in general, a university degree tended to act as a social leveller. All other things being equal, graduates from different social backgrounds (in terms of their parents' jobs and levels of education) tended to do equally well after graduation.

- The exception was in the case of students from the most highly advantaged backgrounds – those who attended private secondary schools. Graduating from the same university, from the same subject, with the same degree classification, students from private school backgrounds tended to have somewhat higher earnings and a greater probability of going on to a professional level job than did their state school counterparts. In terms of starting salary, this difference was around £1,350 per year on average.

Figures from the Office for National Statistics show that 38% of adults in the UK have a university degree or other higher education qualification.[3] And with university entrance rates at record highs, and the removal of the student numbers cap, this figure can only increase. UCAS figures show that more students were accepted into higher education in 2013 than in any year previously (a recovery from the dip in 2012, coinciding with the introduction of higher tuition fees).[4]

Many, if not all, of these young people's parents will be hoping that a university degree will be a ticket to a better future career for their children. And a look at the overall figures would suggest that they are right. A report released by the Department of Business, Innovation and Skills (BIS) in 2013 estimated that men with a degree earned 28% more than men without.[5] For women, this gap was 53%. In fact, the link between higher education and earnings appears to be stronger in the UK than elsewhere in Europe.[6][7]

However, all degrees are not created equal. There is a strong public perception that degrees in some subjects, and particularly from some universities, will have a greater impact on your future prospects. In this report, we examine differences in the career attainment of graduates from different degree subjects at different universities and determine which universities and subjects are most strongly improving students' earnings and career outcomes. We also look specifically at which courses are improving the prospects of students from more and less advantaged backgrounds.

[3] Office for National Statistics. (2013). Full report – Graduates in the UK Labour Market 2013. [available at: http://www.ons.gov.uk/ons/dcp171776_337841.pdf]

[4] UCAS. (2013). 2013 Application Cycle: End of Cycle Report. [available at: http://www.ucas.com/sites/default/files/ucas-2013-end-of-cycle-report.pdf]

[5] Walker, I., & Zhu, Y. (2013). The impact of university degrees on the lifecycle of earnings: some further analysis. *Department for Business Innovation and Skills*. [available at: http://tinyurl.com/khzwaw7]

[6] Glocker, D., & Steiner, V. (2011). Returns to education across Europe: A comparative analysis for selected EU countries. [available at: https://ideas.repec.org/p/zbw/fubsbe/201115.html]

[7] Serafino, P., & Tonkin, R. (2014). Intergenerational transmission of disadvantage in the UK & EU. *Office for National Statistics*. [available at: http://www.ons.gov.uk/ons/dcp171766_378097.pdf]

In recent years there have been a number of investigations into the differing career prospects of graduates from different universities and subjects. These studies have been carried out both by independent academic researchers and by government departments.

The majority of this research has made use of data collected by the Higher Education Statistics Agency (HESA), through the Destinations of Leavers of Higher Education survey (DLHE). This survey follows up graduates' six months and 3.5 years after graduation to check on their current work and life circumstances.

Differences between graduates

The 2008 Northern Ireland study

In 2008, the Northern Ireland Department of Employment and Learning (DELNI) examined DLHE data for the UK graduating class of 2008 six months after graduation.[8] They attempted to determine whether there were significant differences in earnings (the study was restricted to those in full-time employment) between graduates of different backgrounds, and between graduates from different universities and different subjects. They found that there was indeed substantial variation in early salaries, particularly between graduates from different universities. Graduates from the university with the highest average graduate salaries earned almost <u>three times more</u> than their peers with degrees from the university with the lowest average salaries – around £25,000 per year compared with around £9,000 per year (individual universities were not named in the report, likely due to HESA restrictions on the publication of data from the DLHE survey).

Breaking the results down by broader university type also revealed notable differences, though mainly for male graduates. Men graduating from Russell Group universities reported starting salaries around 10% higher than those graduating from post-1992 institutions,[9] and around 5% more than those graduating from pre-1992, non-Russell Group universities. By contrast, female Russell Group graduates enjoyed only a 3-4% earnings premium over their peers from other types of university.

The DELNI report also found large differences in starting salary between graduates from different degree subjects – with the magnitude of these differences being more consistent across genders than the differences between university types. For both genders, graduates from design or creative arts courses had the lowest average earnings, with starting salaries of around £14-15,000 per year. The subject with the highest average graduate earnings was veterinary science, with starting salaries of around £21,000 – a 30% earnings premium over creative arts and design subjects. Other relatively high earning subjects included education (roughly £18,000 per year) and subjects allied to medicine (roughly £19,000 per year). The higher average salaries enjoyed by these subjects are likely due to their direct links with professions with defined career paths and relatively high entry-level/training salaries (veterinary medicine, teaching, and medicine). Other subjects which did not fit this description, but which nevertheless had relatively high graduate earnings were mathematics and computer science, which commanded earnings premiums of 18-25% over design or creative arts courses.

These earnings differences between universities and subjects are not fully independent. Different types of university emphasise difference subjects. For example, some elite universities like Oxford and Cambridge do not offer courses in subjects like drama or design. Some of the earnings

[8] DELNI (2008). Graduate Earnings: An Econometric Analysis of Returns, Inequality, and Deprivation across the UK [available at: dera.ioe.ac.uk/9751/1/graduate_earnings_main_report.pdf]
[9] 'Post-1992' institutions are those, including polytechnics, granted university status through the 1992 Further and Higher Education Act

advantage of students attending elite universities may therefore be due to their being less likely to study courses with lower salary prospects. The reverse is also true – a proportion of the earnings premium associated with studying pure mathematics might be explained by maths graduates being more likely to have attended universities with better graduate employment outcomes. On top of this, large amounts of the differences between graduates might be explained by characteristics independent of their degrees, particularly ability and social background. Put simply, higher earning courses may attract high ability students from advantaged backgrounds who would have had higher earning potential in any case.

The authors of the DELNI report accounted for this by using by using statistical modelling to test the independent effects of each of these factors. These models showed that the 'pure' effects of university type and degree subject were substantially smaller than the headline differences would suggest. For example, the earnings premium associated with the Russell Group was reduced to around 3.5% for men and to essentially zero for women. However, the rank order of subjects and institutions by average graduate earnings was largely preserved.

The 2011 Chevalier study

This DELNI study focused on graduate salaries six months after graduation. A subsequent academic study by Arnaud Chevalier in 2011 specifically examined the effects of degree subject on the earnings of graduates in full-time employment three years after graduation (using data from students graduating in 2003).[10] He classified degree subjects somewhat differently from the authors of the DELNI study, so the results are not completely comparable. However, the broad findings were similar, suggesting that the starting salary advantage associated with some subjects is preserved. Subjects at the upper end of average earnings were medicine (and related subjects), mathematics, engineering, architecture, economics and computer science; subjects at the bottom end were linguistics and classics, communication, psychology and creative arts. Medicine and dentistry graduates in particular were clear outliers, with average reported earnings 50% higher than creative arts graduates (around £40,000 versus around £19,000). However, even excluding these outliers, the differences between subjects remain substantial. Economics graduates, as the next highest paid graduates after medics and dentists reported salaries 24% higher than those of creative arts graduates on average.

As with the DELNI study, Chevalier used regression models to isolate the effect of degree subject from the confounding effects of university quality (measured using league table scores), demographics, ability (measured using A-level scores) and social background. Again, the magnitude of the differences between subjects was reduced, but the rank order was largely preserved. One interesting result from this study was that, holding A-level grades equal, education was one of the most highly paid subjects – due to its relatively low entry requirements and relatively high starting salary.

Obviously the earnings of graduates in full-time employment are only one part of the graduate employment picture. Other studies using the DLHE data have examined differences between graduates in other employment outcomes, including the risk of being unemployed.

The 2010 Universities UK report

In 2010, Universities UK released a report investigating the impact of the recession on graduate subject choices.[11] The main focus of this report was therefore not on graduate outcomes. However,

---

[10] Chevalier, A. (2011). Subject choice and earnings of UK graduates. *Economics and Education Review*, 30(6), 1187-1201

[11] Universities UK. (2010). Changes in student choices and graduate employment [available at: www.brunel.ac.uk/_data/assets/pdf_file/0020/92720/ChangesInStudentChoicesAndGraduateEmployment201009071.pdf.

the report did include an analysis of the effect of degree subject on the risk of being unemployed six months after graduation (using pooled data from 2006-2009 graduates). In line with the results for earnings, they found that graduates of medicine and related subjects were at the lowest risk of unemployment, with archaeology, design, and cinema and photography graduates at the highest risk. However, unlike the earnings results, the report found relatively small differences between bio-scientific, maths, physical sciences, and arts and humanities graduates.

These results suggest that, in terms of the likelihood of finding a job at all, it is really only those studying medicine and related subjects who have an advantage. Graduates of most other subjects have similar chances. This is not entirely surprising given the overall low level of unemployment among graduates as a whole.

A more surprising finding from the study was that graduates from computer science courses (including software engineering and information systems) were at relatively high risk of unemployment compared with other graduates. This conflicts with studies of earnings, which suggest that computer science graduates are among the highest earners. There are several potential explanations. First, the earnings differences reported by both the DELNI and Chevalier studies were for graduates working full-time. If computing careers are highly competitive, then it is possible that computer science graduates endure a high-risk of unemployment before (hopefully) landing a relatively highly paid job. Second, the differences unemployment levels reported by the Universities UK study did not account for the potential confounding influences already discussed (such as student background, A-level attainment or university type). The increased risk of unemployment for computer science graduates may therefore be partially explained by, for example, a large fraction of certain types of software design courses being offered at lower-tier universities.

The 2014 Macmillan et al. study

A further interesting study of graduate outcomes was carried out recently by Lindsey Macmillan and colleagues at the Institute of Education.[12] They used DLHE data from students graduating in 2007 to investigate the gap between graduates from advantaged and disadvantaged backgrounds in access to professional careers. The question they intended to answer was whether this gap could be entirely explained the characteristics of the graduates' degree courses – were graduates from more advantaged homes more likely to get the top jobs because (on average) they pursued more appropriate subjects at superior universities, and attained better degree classifications?

Macmillan and her colleagues found that, even after accounting for these factors, there remained a small but significant difference between graduates from different social backgrounds in access to professional jobs 3.5 years after graduation. All else being equal, graduates who had attended private school particularly were significantly more likely to gain professional employment than their state school counterparts.

Although this study did not focus specifically on evaluating the differences between graduate according to university type or degree subject, these factors were examined as part of the analysis. Consistent with the findings for earnings and unemployment risk, the results showed that (again, all other things being equal) medicine graduates were significantly more likely than graduates from other subjects to be in professional employment 3.5 years after graduation. The results also showed that, compared to a baseline of graduates Russell Group universities, graduates from Oxbridge, Imperial,

---

[12] Macmillan, L., Tyler, C., & Vignoles, A. (2014). Who Gets the Top Jobs? The Role of Family Background and Networks in Recent Graduates' Access to High-status Professions. *Journal of Social Policy,* DOI: http://dx.doi.org/10.1017/S0047279414000634

or UCL were significantly more likely to be in professional jobs, while graduates from Guild HE, University Alliance and Million + groups were significantly less likely.[13]

Differences in the graduate premium

Because the DLHE follows a specific cohort of students into their post-graduation lives, it is an ideal resource for comparing different types of graduates. However, the DLHE survey does not include a comparison sample on non-graduates. It is therefore not ideal for examining the extent of the graduate premium (the graduate premium is simply the increased earnings a university graduate might expect to enjoy relative to a similar person who did not complete a degree). The DLHE is also a survey of recent graduates, most of whom will be in their early 20s. It therefore cannot speak to differences in outcomes later in the life-course.

Two recent reports by Ian Walker and Yu Zhu have attempted to quantify the extent of the graduate premium and how it might differ for graduates from different universities and different degree courses, using data representative of all working age adults. In 2010, they used data from the Office for National Statistics (ONS) Labour Force Survey from 1994-2009[14] to examine the earnings trajectories of those with at least an undergraduate degree earned compared to those who did not have a degree, but had at least two A-levels.[15] They found that, although all degree subjects were associated with increased wages, there was still substantial variation between them (particularly for men).

Grouped together, law, economics, and management degrees were associated with the highest graduate wage premium. This seems inconsistent with the DLHE research which has tended to show graduates from the medicine and related subjects as the highest earners. This could be due to the nature of the DLHE survey, which as we have noted, is restricted to recent graduates. It is entirely possible that medicine graduates enjoy an earnings premium shortly after graduation, which is then eclipsed by the premium attached to law, economics, and management degrees. However, a more likely explanation, given the strong earnings potential of medical careers, is the broad subject categorisation employed in this study. Due to concerns about sample size, Walker and Zhu categorised degree subjects into four groups: STEM (science, technology, engineering, and medicine, including maths), OSSAH (other social sciences, arts, and humanities, including languages), the aforementioned LEM (law, economics, and management), and COMB (degrees with more than one subject). In this categorisation, medicine and related subjects are grouped together with mathematics and engineering, which DLHE research has suggested are relatively high earning, but also with the biological sciences and psychology, with DLHE research suggests are low earning but also very popular. This issue illustrates the importance of the categorisation of subjects to this type of research.

A further interesting result from the Walker and Zhu study was that the characteristics of the graduate premium differed strongly between men and women. The earnings premium for female graduates was very high, due to the very low average wages of non-graduate women. This high overall premium also meant that there was less variation between subjects for women than for men.

Unfortunately, the ONS Labour Force Survey does not include any information on which university any given graduate attended, making it impossible to compare the graduate premium between different universities or university types. In 2013 Walker and Zhu therefore produced an updated report for the Department of Business, Innovation and Skills (BIS), including additional data on this

---

[13] These bodies whose membership is primarily composed of post-1992 universities

[14] The Labour Force Survey is the largest household survey in the UK and is the source of the government's official employment and unemployment figures

[15] Walker, I., & Zhu, Y. (2010). Differences by degree: Evidence of the Net Financial Rates of Return to Undergraduate Study for England and Wales. *IZA Discussion Paper #5254* [available at: http://ftp.iza.org/dp5254.pdf]

topic from the British Household Panel Study (and also including a more fine-grained breakdown of degree subjects).[16]

This updated report was more consistent with previous DLHE research in terms of differences between degree subjects. It showed that the largest graduate premiums were again associated with economics and law, but also with medicine and related subjects (disaggregated from STEM more broadly). Nursing, mass communication, history and philosophy, and art and design graduates enjoyed the lowest premiums. In fact, for men, the graduate premiums associated with art and design and with history and philosophy were actually negative – meaning that men graduating with degrees in these subjects tended, on average to earn *less* than men with at least two A-levels but no university degree. For women, the rank order of subjects was the same, though there were no negative premiums. As with the previous report, the variation in the premium between subjects was smaller for women.

The findings for university type were less consistent with DLHE findings. Comparisons between Russell Group, Old (pre-1992, non-Russell Group), and New (post-1992) yielded the expected earnings advantage for Russell Group graduates. However, after accounting for parental education and A-level results this difference was no longer statistically significant.

Summary

Taken together, existing research paints a relatively consistent picture:

1. Medicine and related subjects are among the degree courses with the best average graduate earnings and employment prospects.
2. Other applied subjects with direct relationships to specific professions, such as architecture or veterinary medicine, are also associated with higher starting and early-career salaries and good employment prospects.
3. The highest earning non-applied subjects, all other things being equal, tend to be in the areas of mathematics, computer science, or economics. The lowest earning subjects tend to be in the areas of humanities or art and design.
4. There is some evidence of an independent positive effect of attending a prestigious university. However, the evidence for differences by university type is weaker than for differences by degree subject.

However, there are several questions to which existing research does not provide easy answers. First, existing research has tended to group both universities and degree subjects together in fairly large categories, which may obscure substantive distinctions. Of particular interest is the potential advantage that may accrue to graduates from the universities of Oxford or Cambridge, separate from other elite institutions. Previous studies have tended to group these universities together with other Russell Group universities. In this study we take full advantage of the large sample size of the six-month DLHE survey to examine these institutions separately.

Second, previous studies have also tended to focus on examining the independent effects of either degree subject or institution type, rather than the potentially strong effect of particular subject and university type combinations. For example, the overall earnings advantage enjoyed by Russell Group graduates may be small, but the combination of a Russell Group institution with a high-earning subject may be potent.

Third, existing research does not address whether and how much certain degree subjects or university types might benefit some groups more than others. Of particular interest is whether some

---

[16] Walker, I., & Zhu, Y. (2013). The impact of university degrees on the lifecycle of earnings: some further analysis. *Department for Business Innovation and Skills*. [available at: http://tinyurl.com/khzwaw7]

courses might be of extra benefit to students from less advantaged backgrounds. For example, applied subjects have been shown to have an earnings advantage over other types of courses; however, is this earnings advantage particularly strong for students from less advantaged backgrounds? Or, to take one example, is the earnings advantage medicine graduates enjoy over English literature graduates smaller for those from privileged backgrounds, than for those from disadvantaged backgrounds? Conversely, is the disadvantage generally suffered by art and design graduates larger or smaller for those from less advantaged backgrounds? These are not questions to which the existing literature provides ready answers.

Finally, previous research has tended to analyse separate graduate outcomes, such as employment and earnings, in isolation. Given that different studies employ different data sources, and often different ways of categorising degree subject or university type, this can make comparison of the effects of these factors on different outcomes problematic.

OUTLINE OF THE PRESENT RESEARCH

The results of this study are split up into four main sections.

- Sections one and two examine differences in graduate outcomes by university attended and degree subject, respectively.
- Section three examines graduate outcomes for different combinations of subject and university.
- Section four examines the effect of social background – specifically whether degrees from some university types or in some subjects might convey a greater or lesser benefit for people from more or less advantaged backgrounds.

The report focuses on two main measures of graduate career outcomes: earnings for those in full-time work, and the likelihood of entering professional employment.

Data source

The data for this project come from the Destinations of Leavers of Higher Education (DLHE) survey, carried out by the Higher Education Statistics Agency (HESA). This survey has two components: a survey of all graduates from UK higher education[17] institutions (HEIs) six months after graduation, and a follow-up survey of a sub-sample of graduates 3.5 years after graduation. These surveys represent the primary source of data on the destinations of UK graduates.

The six month DLHE survey is based on data provided to HESA by all publicly funded HEIs in the UK, plus the privately funded University of Buckingham. It is the responsibility of each individual university to survey their graduates using any method, or combination of methods they choose (such as postal questionnaire, telephone survey, or online survey), with the questionnaire materials being provided by HESA themselves to ensure consistency. The target population for the survey includes all graduates from UK universities and colleges regardless of their country of origin.

The 3.5 year survey follows up a sub-sample of those interviewed for the six month survey. This sample is selected from leavers across all institutions. However, certain groups (for example, Black and minority ethnic graduates) are over-sampled to ensure sufficient numbers of graduates in these groups for the purposes of statistical analysis. DLHE data are provided with sampling weights to allow the sample to be weighted to be representative of the target population (accounting for both differences due to the sampling design and differences due to non-response). More information on this sampling procedure is available from the HESA website.[18]

For this study we used data from the six month survey for students graduating in the 2012/13 academic year, and 3.5 year data from students graduating in in the 2008/09 academic year (it is therefore important to note that the analyses presented below were not conducted with a single cohort of graduates followed up at six months and 3.5 years, but with two different graduate cohorts). This was in order to use the most up-to-date information graduate career outcomes. Data from these surveys were provided to the Sutton Trust by HESA Information Services.

The target population for six month survey of 2012/13 graduates was 704,400 graduates from all countries and from all program types. Of these, 485,695 responded, giving an overall response rate of 69.0%. However, from the core target population of 570,330 EU and UK domiciled respondents, 446,905 responded – a response rate of 78.4%. UK domiciled graduates were more likely to respond to the survey, as were graduates from full-time rather than part-time programmes.

The target population for the 3.5 year survey of 2008/09 graduates was the 354,730 leavers who took part in the six month survey of 2008/0 graduates. Of these, 273,580 were selected for interview. As noted above, the sample was selected to be representative of the population of leavers from all institutions, with over-sampling of some groups. Valid responses were obtained from 62,195 of the selected leavers – giving an overall response rate of 22.7%. However, it should be noted that this is the response rate for the target population of leavers who completed the six month survey, not the rate for the full population of 2008/09 leavers. When interpreting the results of this study, it should therefore be noted that figures may be biased by non-response. For example, graduates who are experiencing significant difficulties may be less willing to complete the survey – leading to an overestimation of average graduate earnings. However, the HESA survey weights account for

---

[17] Higher Education includes foundation degrees, Higher National Diplomas, and Higher National Certificates, as well as Bachelor's degrees and postgraduate qualifications. However, this report specifically focuses on graduates from first undergraduate degrees.

[18] https://www.hesa.ac.uk/dlhelong0809_defs

differential non-response between universities, so this bias should not strongly affect comparisons made between universities.

The analyses reported in this study were restricted to UK domiciled graduates from undergraduate first degree programmes (including full-time and part-time study), excluding graduates from the Open University.

Methods

Variable definitions

As noted above, this report focuses on two primary graduate outcomes:

1. **Earnings**: Earnings information was derived from graduates' own reports of their yearly salary. We restricted our analyses of earnings to only those graduates who reported being in full-time work at the time of the survey.

   Graduates reported their salaries in £5,000 intervals, which we converted to a continuous scale using the interval mid-points. Specific salary figures quoted in the main text of the report should therefore be considered approximate.

2. **The likelihood of attaining professional employment**: Professional employment was defined in two different ways for the six month and 3.5 year analyses. At six months, we analysed the likelihood of obtaining higher or lower professional employment, defined as occupations in the top three analytic classes of the National Statistics Socio-Economic Classification scales (NS-SEC). These cover i) large employers and higher managerial and administrative occupations, ii) higher professional occupations and iii) lower professional and technical occupations.

   Due to the very high proportion (70%) of graduates in these types of jobs 3.5 years after graduation, we used a more restrictive definition of professional employment for these analyses, focusing on only the top two NS-SEC classes.

   In both cases, the analyses were restricted to graduates who reported their primary activity at the time of the survey as being full or part-time work, or who reported being unemployed (i.e. excluding those who were primarily engaged in further study, due to start work, or engaged in another activity such as travelling, or looking after the home or family).

Full details of the coding of these and all other variables are given in Appendix A.

The primary bases of comparison in this report are university types and degree subjects. Universities were divided into five types:

1. **Post-92 universities:** These institutions are those, including polytechnics, granted university status through the 1992 Further and Higher Education Act

2. **Pre-92 universities:** These are universities with university status prior to the 1992 act, but which do not fall into the Sutton Trust 13/30 or Oxbridge

3. **The Sutton Trust 30** (ST30): These are the universities classified by the Sutton Trust as the 30 most selective institutions in the UK. This includes all 24 members of the Russell Group.[19]

---

[19] The ST13 plus the Universities of Bath, Cardiff, Exeter, Glasgow, Lancaster, Leeds, Leicester, Liverpool, Manchester, Newcastle, Reading, Sheffield, Southampton, Strathclyde, and Surrey, plus King's College London and Royal Holloway College

4. **The Sutton Trust 13** (ST13): These are 13 universities classified as the most selective universities by the Trust[20]

5. **Oxbridge**: Oxford and Cambridge

These categories are not naturally exclusive – the Sutton Trust 30 includes the Sutton Trust 13, with both including Oxford and Cambridge. For the purposes of this study we examined these groups as exclusive: the Sutton Trust 30 excluding the Sutton Trust 13 and the Sutton Trust 13 excluding Oxbridge.

Degree subjects were initially divided into 29 categories based on their HESA subject code. For respondents who were studying more than one subject, HESA provides a balance measure, indicating the proportion of their overall qualification each subject represented. For these respondents we coded degree subject as the subject which took up the largest proportion. Where the subjects were equally balanced, the subject was coded as 'Combined'.

For the purposes of some analyses the 29 categories were collapsed into seven higher-order categories in order to preserve sample size. Table 2 gives the correspondence between the higher and lower order subject categories. More detail on subject coding is given in Appendix A.

Analyses

The figures reported in this study are derived from two main types of analysis. First are comparisons of simple descriptive statistics, such as the mean salary of graduates from different university types, or the proportion of graduates from different degree subjects that are in professional jobs.

The second type of analysis attempts to account for the fact that a proportion of the difference between university types is likely to be explained by other student characteristics. For example, as described in the introduction, some of the earnings advantage associated with graduating from Oxford or Cambridge is likely to be due to differences in social background and ability. In other words, one of the reasons why Oxford and Cambridge graduates are likely to end up in better paying jobs may be the highly selective Oxbridge admissions process – they only admit students who would likely have done well anyway. The graduate characteristics accounted for in this study were:

1. Demographics (age and gender)

2. Region of domicile before the start of the course (Government Office Region)

3. Exam results at age 18 (derived from UCAS Tariff Score)

4. Study mode (full-time or part-time)

5. Degree classification (1st, 2:1, etc)

6. Social background

   a. Whether at least one of the respondent's parents had a higher education qualification prior to the start of the respondent's degree[21]

   b. Whether the respondent had attended a private or a state secondary school

   c. Whether the respondent's highest earning parent or guardian had a professional job prior to the start of the respondent's degree (or, for respondents who were aged 21 or

---

[20] The Universities of Birmingham, Bristol, Cambridge, Durham, Edinburgh, Nottingham, Oxford, St Andrews, Warwick, and York, plus Imperial College London, LSE, and UCL
[21] This specific indicator was not available in the 3.5 year data

over at the beginning of their course, whether they themselves had a professional job)

We used multivariate regression models to examine the effects of university type and degree subject after accounting for these factors. Both university type and degree subject were included in these models together in order to examine their independent effects (i.e. the effect of university type regardless of subject, and the effect of subject regardless of university type). In the analyses of outcomes for 2008/09 graduates 3.5 years after graduation, an indicator of whether the respondent had gone on to obtain a higher degree (Master's or PhD) was also included in the analyses. Full details of the regression models, including the sample restrictions of each model, are given in Appendix B.

Descriptive statistics for the variables used in this study are given in the tables below.

Table 1 Proportion of graduates from each university type

	2012/13 grads at 6m	2008/09 grads at 3.5 years
Post-92	55.1%	49.2%
Pre-92	17.3%	17.0%
ST30	16.3%	20.0%
ST13	9.5%	13.7% (inc Oxbr)
Oxbridge	1.8%	N/A

Table 2 Proportion of graduates from each degree subject

	2012/13 grads at 6m	2008/09 grads at 3.5 years
Humanities & social sciences	**29.2%**	**30.4%**
Psychology	3.8%	
Social science	4.5%	
Journalism & media studies	2.3%	
Languages, linguistics, & classics	0.6%	
English	2.8%	
Area studies	1.0%	
History & philosophy	3.9%	
Design & creative arts	10.4%	
STEM	**18.0%**	**18.3%**
Biological sciences	3.3%	
Physical sciences	4.3%	
Maths	2.0%	
Engineering & technology	4.3%	
Computer science	2.4%	
Applied computing	1.2%	
Materials technology	0.5%	
Economics & business	**9.4%**	**8.9%**
Economics	1.4%	
Business & management	8.0%	
Medicine & related	**13.3%**	**12.6%**

Medicine & dentistry	2.7%	
Subjects allied to medicine[22]	10.1%	
Veterinary medicine	0.5%	
Vocational (non-medical)	**13.5%**	**13.5%**
Agriculture & related	0.5%	
Architecture	0.9%	
Other building & landscaping	1.5%	
Social work	2.0%	
Law	3.8%	
Education	4.8%	
Hospitality, leisure, sport, & tourism	**4.5%**	**3.6%**
Sport science	3.0%	
Hospitality, leisure, sport, & tourism	1.4%	
Combined	**12.1%**	**12.6%**

Table 3 Descriptive statistics for outcomes and predictors

	2012/13 grads at 6m	2008/09 grads at 3.5 years
Outcomes		
Mean salary	£20,425	£26,643
In professional job?	61.1%	70.0%
Predictors		
Age groups		
18-21	35.8%	0.0%
22-25	48.3%	57.5%
26-29	5.3%	27.2%
30+	10.6%	15.4%
Gender		
Male	43.2%	40.5%
Female	56.8%	59.5%
Study mode		
Part-time	6.6%	6.8%
Full-time	93.4%	93.2%
Degree class		
1st	19.3%	16.1%
2:1	49.8%	49.9%
2:2	21.7%	24.1%
3rd/Pass	3.7%	4.4%
Unclassified	5.6%	5.6%
Parent has HE qualification?	49.5%	N/A
Parent had professional job?	43.5%	70.0%
Attended private school?	10.4%	11.5%

---

[22] Subjects allied to medicine includes nursing as well as other subjects such as nutrition, pharmacology, optometry, and alternative medicine
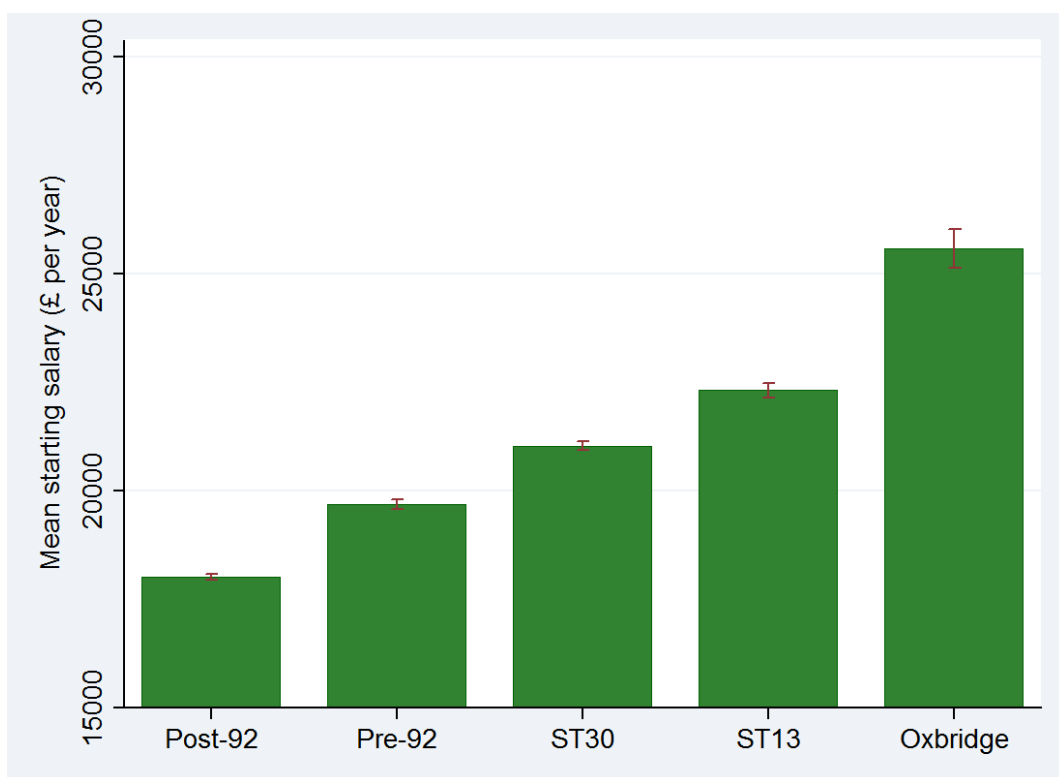
This section describes differences in graduate outcomes between universities, first in terms of earnings, and second in terms of the likelihood of obtaining a professional job.

Earnings

Raw differences

Figure 1 shows the average starting salary for graduates in full-time work from different types of university, without adjusting for any other factors. These figures show a fairly straightforward salary gradient, with graduates from post-92 universities earning the lowest starting salaries, and Oxbridge graduates the highest. This gradient is fairly linear, from post-92 to ST13 universities, with a larger jump in earnings associated with the move from other ST13 universities to Oxbridge.

Figure 1 Mean graduate starting salary by university type

Note: Unadjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720).[23] Error bars are 95% confidence intervals.

The salary differences are substantial. Graduates from the generally less selective Post-92 universities had an average starting salary of approximately £18,009 per year, whereas average starting salaries for Oxbridge graduates were around £7,500 (42%) per year higher at £25,582. Between these two extremes there was a clear earnings gradient. Graduates from ST13 universities enjoyed average starting salaries approximately £1,280 (6%) higher (£22,311) than ST30 graduates (£21,031), who in turn earned £1,348 (7%) more than other pre-92 graduates (£19,684), who in turn earned £1,675 (9%) more than graduates from post-92 institutions.

---

[23] Note that all counts given in this document are rounded to the nearest five, in accordance with HESA data protection policies

Figure 2 shows that these differences are also present for 2008/09 graduates 3.5 years after graduation. Note that due to the substantially smaller sample size of the 3.5 year DLHE survey, there are too few graduates in the Oxbridge group to provide reliable figures for all the relevant analyses. Oxford and Cambridge graduates are therefore included in the ST13 university group for these and subsequent analyses of the 3.5 year figures.

Figure 2 Mean graduate salary at 3.5 years by university type

Note: Unadjusted figures for all 2008/09 graduates in full-time work who had information on all relevant factors (N=9,330). Error bars are 95% confidence intervals. Figures weighted using HESA sampling weights.

Figure 2 shows that the salary gap between the ST13 (including Oxbridge) and post-92 graduates in the 3.5 year data is approximately £6,947 (£30,744 vs. £23,797 – 29%). There also remain substantial gaps along each point in the scale, with post-92 graduates earning on average approximately £2,532 (11%) less per year than graduates from pre-92 universities, who in turn earn £2,282 less (9%) than ST30 graduates, who in turn earn £2,136 less (7%) than ST13 graduates.

As noted in the Data and Methods section, it is important to bear in mind that Figure 1 and Figure 2 do not represent earnings for the same group of graduates six months and 3.5 years after graduation. The 3.5 year figures are for 2008/09 leavers and the six month figures are for 2012/13 leavers. These figures were examined as the most up-to-date figures on graduate earnings. However, there may be important differences between the two cohorts. For example, the 2008/09 cohort graduated at the height of the recession, which is likely to have had an impact on their average career profiles. However, these and subsequent results appear to show the patterns of outcomes across university types and degree subjects to be relatively consistent.
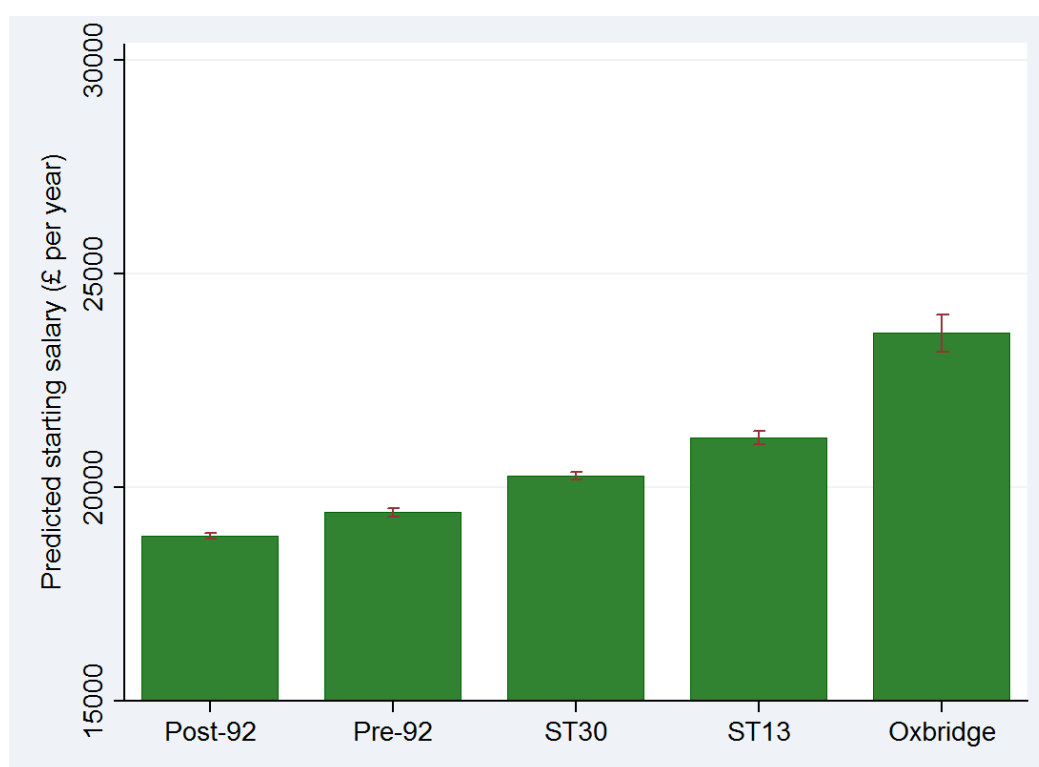
Adjusted differences

The results in Figures 1 and 2 do not account for differences between graduates in their subject choice, demographic characteristics, social background, degree classification, region of domicile, or

mode of study (full or part-time). Figures 3 and 4 show the differences in earnings that remain after accounting for these factors.

Figure 3 shows that accounting for these factors reduces the magnitude of salary differences between graduates from different university types.[24] However, the differences remain substantive, with a clear advantage for Oxbridge graduates. Average adjusted starting salaries for Oxbridge graduates are still £4,760 (25%) higher than those of graduates from Post-92 universities, and the gap between the latter and ST13 universities is £2,306 (12%). The step-wise gaps between graduates from each university type also remain, with a £858 (4%) gap between pre-92 and ST30 graduates, and a £894 (also 4%) gap between ST30 and ST13 graduates. At £532 (3%), the smallest gap is between graduates from Pre- and Post-92 universities.

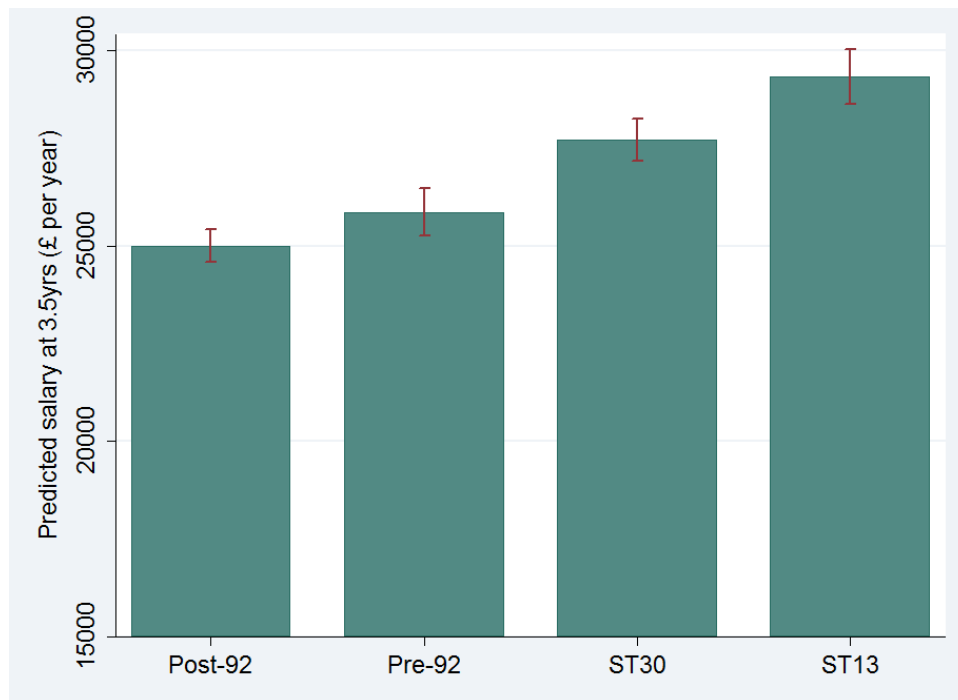**Figure 3 Mean graduate starting salary by university type (adjusted)**

Note: Adjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, parental occupation, and private school attendance.

Figure 4 shows that, accounting for these factors, significant earnings differences also remain for 2008/09 graduates 3.5 years after graduation. All other things being equal, ST13 graduates' adjusted annual salaries are £4,336 (17%) higher than those of graduates from post-92 universities. However, accounting for graduate characteristics and degree type has substantially reduced the gap between pre- and post-92 universities, from £2,532 (14%) to £862 (3%).

---

[24] Full output from all regression models is given in Appendix C

Figure 4 Mean graduate salary at 3.5 years by university type (adjusted)

Note: Adjusted figures for all 2008/09 graduates in full-time work who had information on all relevant factors (N=9,330). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, private school attendance, and postgraduate education. Figures weighted using HESA sampling weights.

These adjusted figures could be interpreted as an estimate of the effect on earnings of a degree from a given university type. For example, for someone of the same age, gender and social background, who has the same A-level results and degree class, and who is from the same region, how much of an earnings boost could be expected from attending a ST13 university over a pre-92 university? However, there are likely to be other unmeasured differences between graduates which may explain a proportion of the observed earnings differences. For example, there may be pre-existing differences in abilities and skills between St13 and pre-92 graduates which are not captured by A-level results.
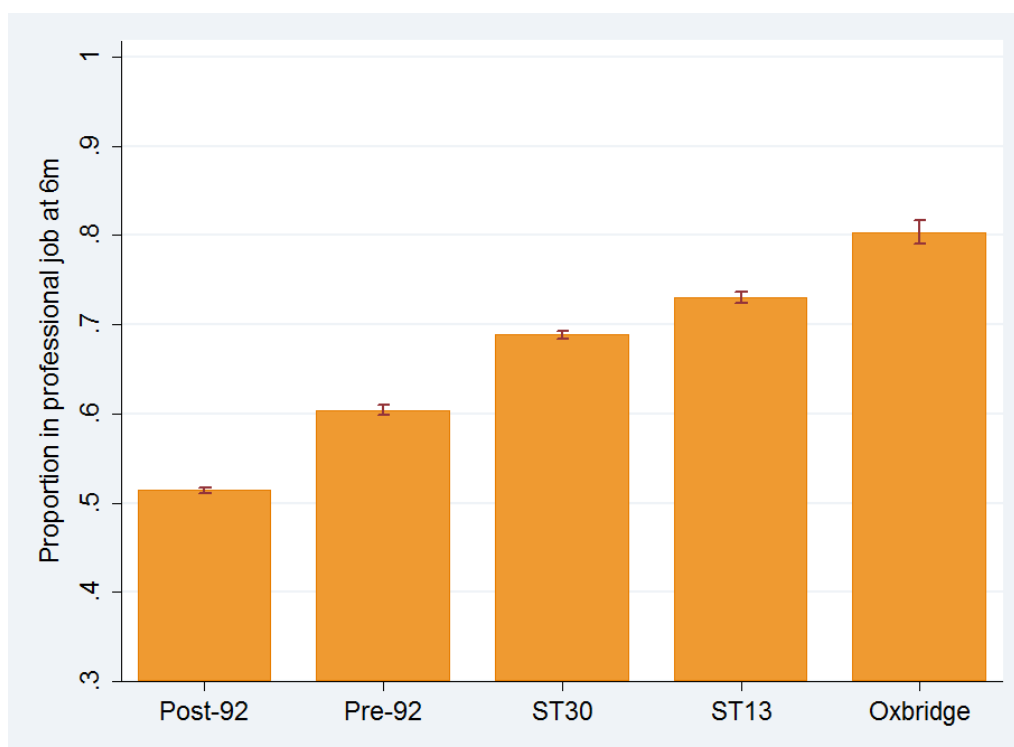
Likelihood of gaining a professional job

Raw differences

Figure 5 shows the proportions of graduates from different universities who were in higher or lower level professional jobs six months after graduation (compared with those who were unemployed or in non-professional jobs).[25] Encouragingly, the figures show that shortly after graduation the majority of graduates from all university types are in professional level occupations. However, there are substantial differences between the university groups, with 80% of Oxbridge graduates in professional employment, compared with only 51% of graduates from Post-92 universities.

As was the case with earnings, there is also a fairly linear gradient across the university types, with the percentage of pre-92, ST30, and ST13 graduates in professional employment being 60%, 69% and 73%, respectively.

Figure 5 Proportion of graduates from each university type in higher or lower level professional jobs six months after graduation
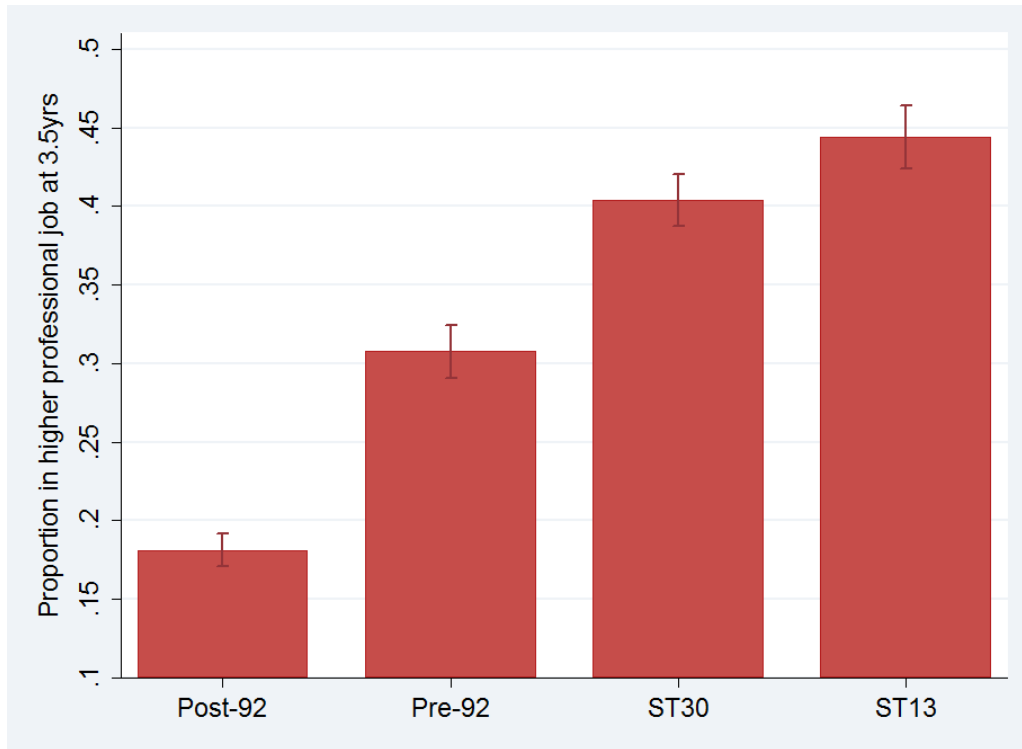

Note: Unadjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals

Figure 6 shows the results for professional employment for 2008/09 graduates 3.5 years after graduation. It should be noted that these figures make use of a *different measure of professional employment* than the six month figures. A large majority of 2008/09 graduates (70%) were in at least lower professional employment 3.5 years after graduation. We therefore concentrated these analyses on higher professional employment only. As with the earnings analyses given above, Oxbridge results are not reported separately because of the relatively small sample size.

---

[25] For a definition of higher and lower professional employment, please see the 'Data and methods' section above

The results given in Figure 6 show that the differences in general professional employment seen at six months are also present at 3.5 years for higher professional employment. Particularly notable is the small proportion (18%) of post-92 graduates in these types of jobs. There is a 26 percentage point gap between graduates from these universities and graduates from the most selective ST13 universities (with 44% of graduates from the latter being in professional employment at 3.5 years).

Figure 6 Proportion of graduates from each university type in higher professional jobs 3.5 years after graduation
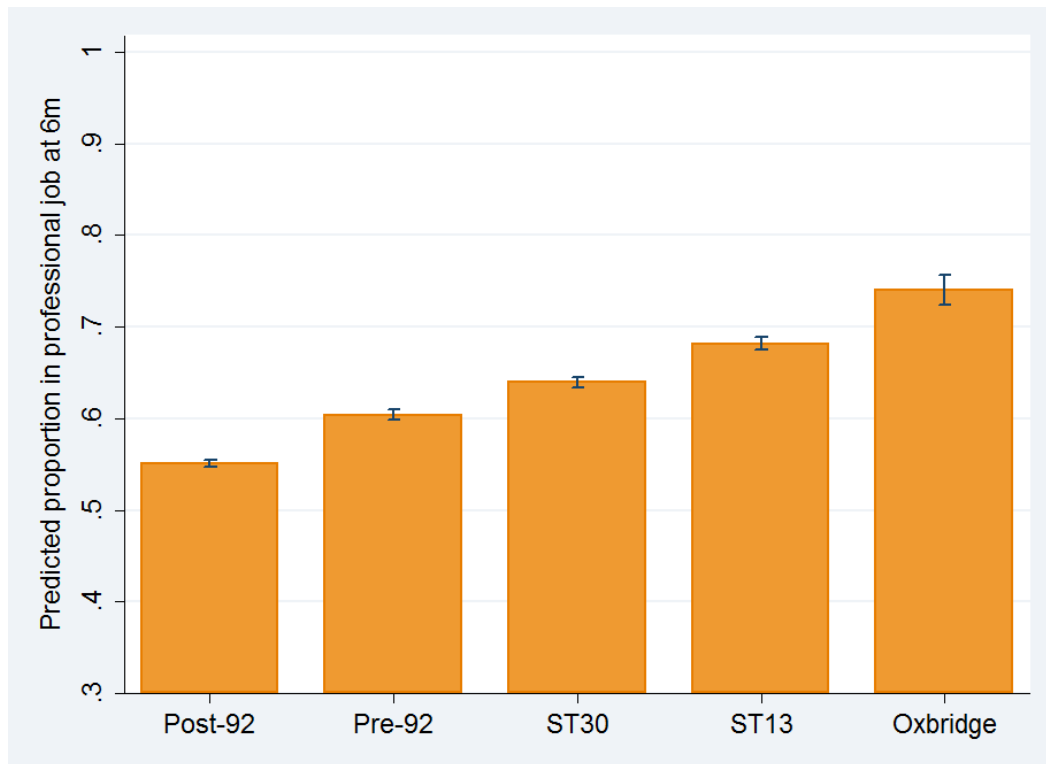

Note: Unadjusted figures for all 2008/09 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=21,440). Error bars are 95% confidence intervals. Figures weighted using HESA sampling weights.

Adjusted differences

Figures 8 and 9 show the remaining differences in professional employment between university types after graduate characteristics and subject choice have been taken into account.

Comparing Figures 6 and 8 shows that accounting for these factors reduces the apparent differences between university types at six months. However, the university gradient remains, with a gap of 19 percentage points between Oxbridge and post-92 graduates (reduced from an unadjusted difference of 29 percentage points).
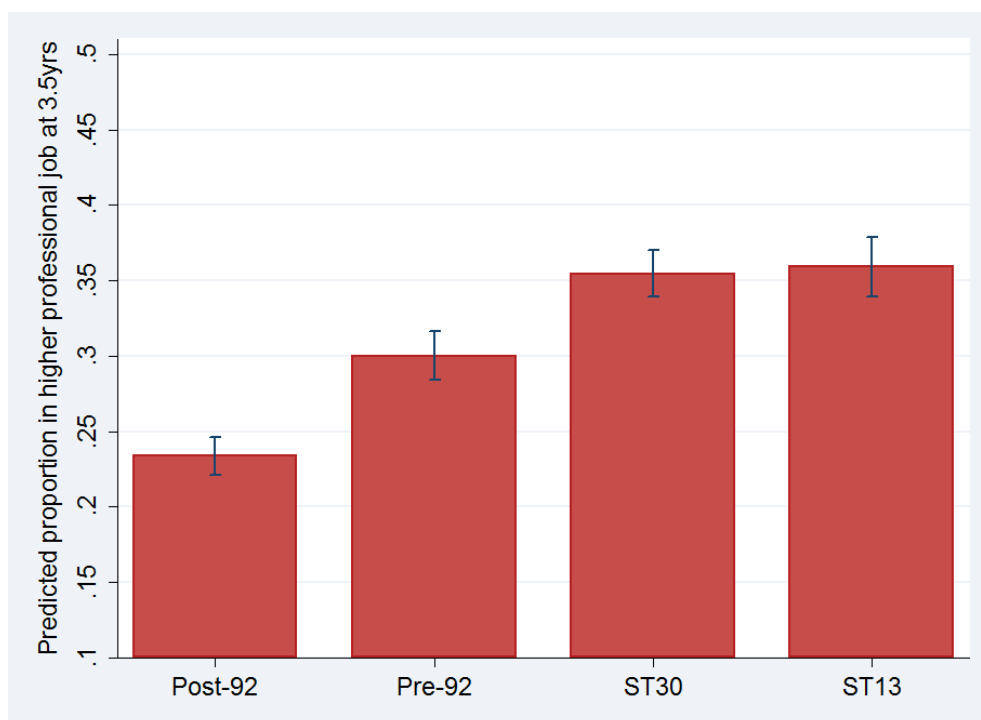
Figure 7 Proportion of graduates from each university type in higher or lower level professional jobs six months after graduation (adjusted)

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals. Figures are adjusted for degree subject, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, parental occupation, and private school attendance

Accounting for these factors also explains a large fraction of the differences in higher professional employment at 3.5 years, as shown in Figure 8. Notably, accounting for graduate characteristics and subject choice, there is no substantive difference in the proportion of graduates from ST13 and ST30 going on to higher professional jobs. However, graduates from these universities remain around 12 percentage points more likely than graduates from post-92 universities to be in higher professional employment.

Figure 8 Proportion of graduates from each university type in higher professional jobs 3.5 years after graduation (adjusted)

Note: Adjusted figures for all 2008/09 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=21,440). Error bars are 95% confidence intervals. Figures are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, private school attendance, and postgraduate education. Figures weighted using HESA sampling weights.
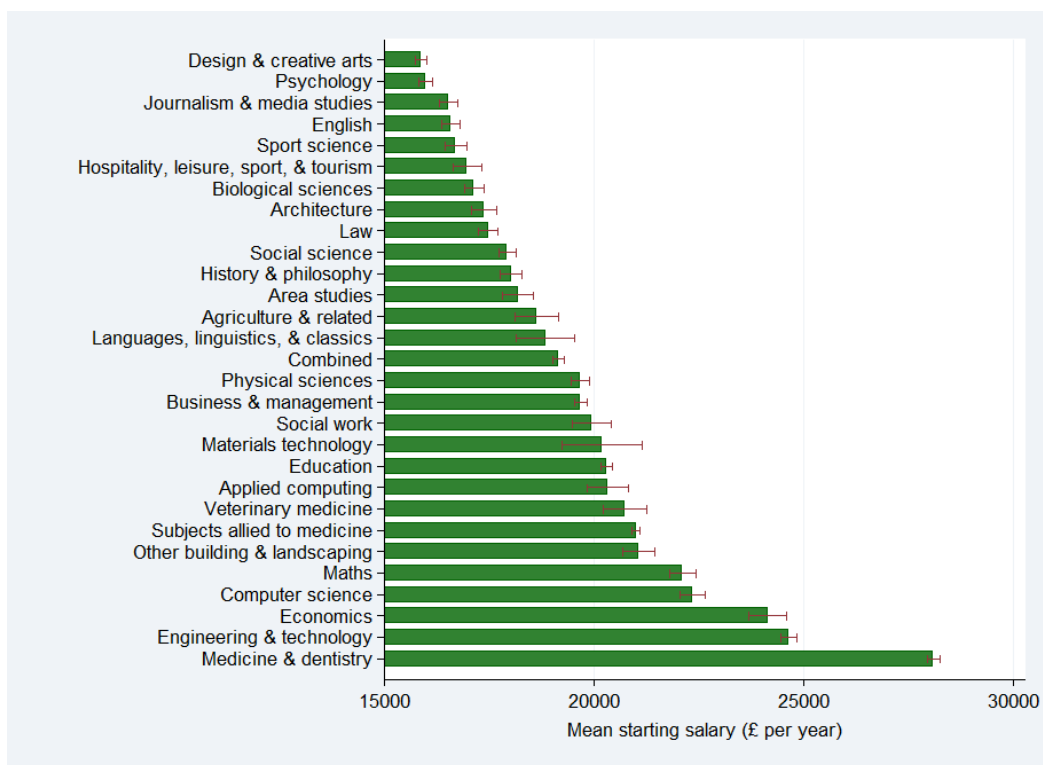
This section describes differences in graduate outcomes according to subject choice, first in terms of earnings, and second in terms of the likelihood of obtaining a professional job.

Earnings

Raw differences

Figure 9 shows the average gross starting salary for graduates from different degree subjects, before any other factors are taken into account. These results show that there are very large differences by subject, with an approximately £12,230 (77%) gap between the highest earning subjects (medicine and dentistry) and the lowest earning (design and creative arts).

Figure 9 Mean graduate starting salary by subject

Note: Unadjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Error bars are 95% confidence intervals.

Aside from medicine, the highest earning subjects are engineering and technology, economics, computer science, and maths. These are subjects with close links to relatively high earning sectors of the economy (engineering, software development, and business and finance). Other subjects with straightforward links to professions with relatively high starting salaries, such as veterinary medicine, subjects allied to medicine, education and social work, are also towards the top end of the distribution.

Previous studies have not tended to examine differences in subjects at this level of specificity. We are therefore able to see some interesting new findings among lower earning subjects. Particularly notable are the low average starting salaries of graduates from psychology; sport science (approximately £16,707); and hospitality, leisure, sport and tourism (approximately £16,981) degrees.

Psychology would typically be classified with the biological sciences. However, based on the above classification, psychology alone is the eleventh most popular degree subject in these data; behind law
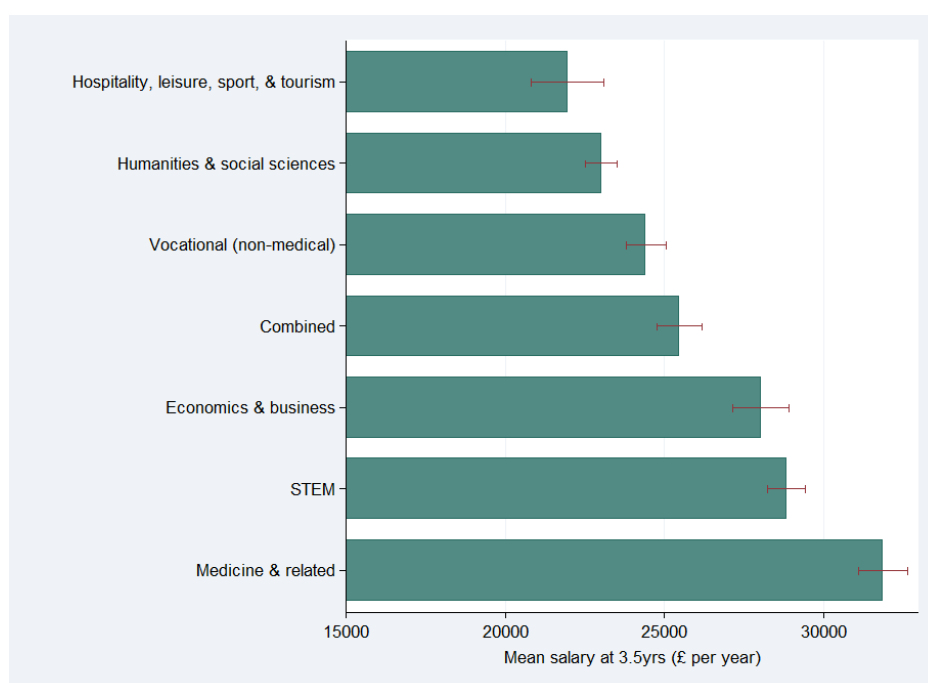
and the physical sciences, but ahead of English, medicine and dentistry, and all of the other biological sciences combined. It is therefore notable that psychology graduates have the second lowest average starting salaries (in fact their average earnings are not statistically distinguishable from those of design and creative arts graduates). Similarly, sport science, which would typically be classified as a biological science, is here shown to be one of the lowest earning subjects.

Hospitality, leisure, sport, and tourism degrees would typically be classified alongside other business and administrative degrees. However, these results show that, while business and management graduates have relatively high average starting salaries (approximately £19,685), graduates from hospitality, leisure, sport and tourism degrees are among the lowest earners.

A somewhat surprising result is the relatively low average starting salary of law and architecture graduates – given that both law and architecture are highly paid careers. A possible explanation for this is that, as well as being highly paid, architecture and law are highly competitive professions. It is therefore possible that many recent graduates in those subjects are required to take on relatively low paid work or internships while seeking jobs in their chosen profession. It is also worth noting that, particularly in the case of law, many degrees will require follow-up postgraduate study – 29% of law graduates in these data were engaged primarily in study at the time of the survey. By concentrating only on those in full-time work, we are excluding this group.

Figure 10 shows the earnings difference between subjects for 2008/09 graduates 3.5 years after graduation. Due to the smaller sample size for this survey, the results are presented for higher level groups of subjects (See Table 2 for the correspondence between the subject groupings). The gaps between these higher level groupings are less pronounced, but remain substantial, with graduates from medicine and related subjects reporting annual salaries approximately £9,897 (45%) higher than those of hospitality, leisure, sports and tourism graduates, and £8,838 (38%) higher than those of graduates from the humanities and social sciences.

Figure 10 Mean graduate salary at 3.5 years by degree subject

Note: Unadjusted figures for all 2008/09 graduates in full-time work who had information on all relevant factors (N=9,330). Error bars are 95% confidence intervals. Figures weighted using HESA sampling weights.
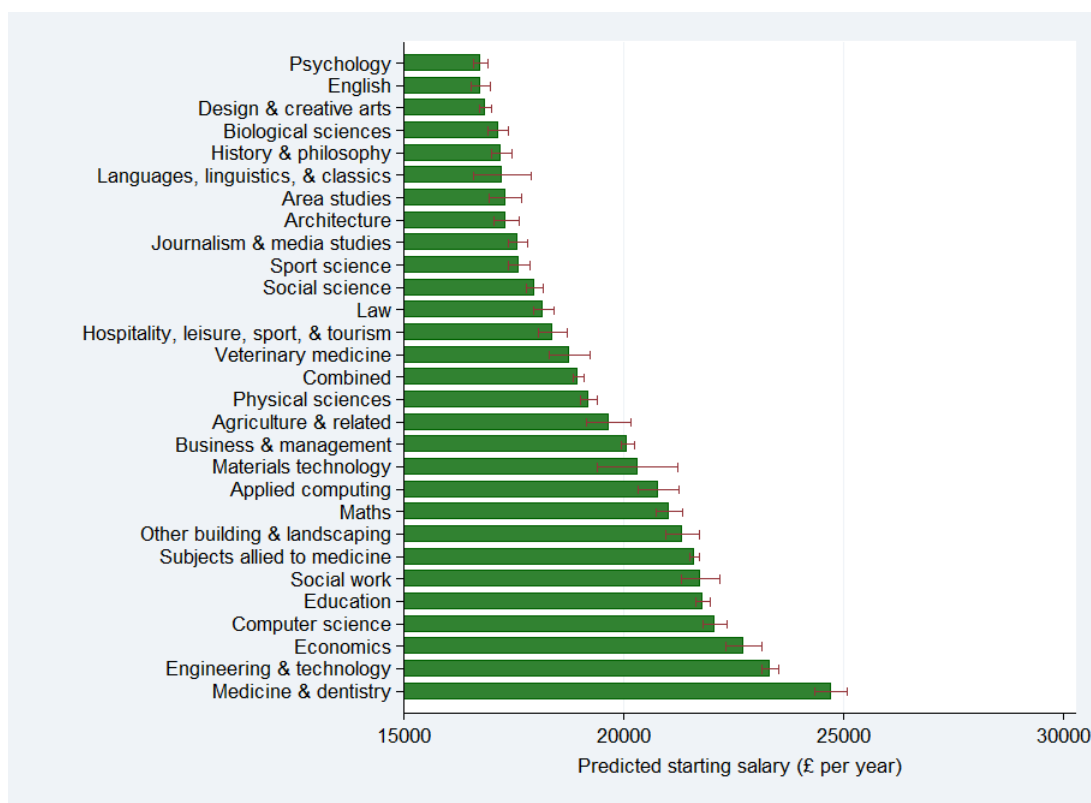
Adjusted differences

Figure 11 shows the differences in starting salary by degree subject after graduate characteristics and university type have been taken into account. Again, accounting for university type and graduate characteristics reduces, but does not eliminate, the earnings disparity between graduates from different degree subjects. The difference in predicted earnings between medicine and dentistry and psychology, English, and design and creative arts graduates is reduced from around £12,000 (77%) to around £8,000 (48%) – still a substantial gap in starting salary.

Perhaps more interesting is the fact that accounting for these factors substantially changes the position of some subjects in the rank order of earnings. The overall pattern is similar, with medicine and dentistry, engineering, and technology, economics and computer science retaining their place as the subjects with the highest starting salaries, and psychology, English, and design and creative arts remaining close to the bottom of the distribution. However, languages, linguistics, and classics; history and philosophy; and veterinary medicine degrees all slip substantially down the rankings – whereas journalism and media studies; social work; and hospitality, leisure, sport, and tourism degrees all move up.

This is likely due to the association between these subjects and both graduate background and university types. Subjects like languages, linguistics, classics, history, and philosophy are more popular among students from more advantaged backgrounds, and are also more likely to be studied at more selective universities. By contrast, vocational subjects like hospitality, leisure, sport and tourism are more popular among students from less advantaged backgrounds, and are more often studied at less selective institutions. Accounting for these differences suggests that, all other things being equal, the former subjects would confer substantially lower starting salaries than one would expect from the raw averages; whereas the latter subjects would confer higher starting salaries.

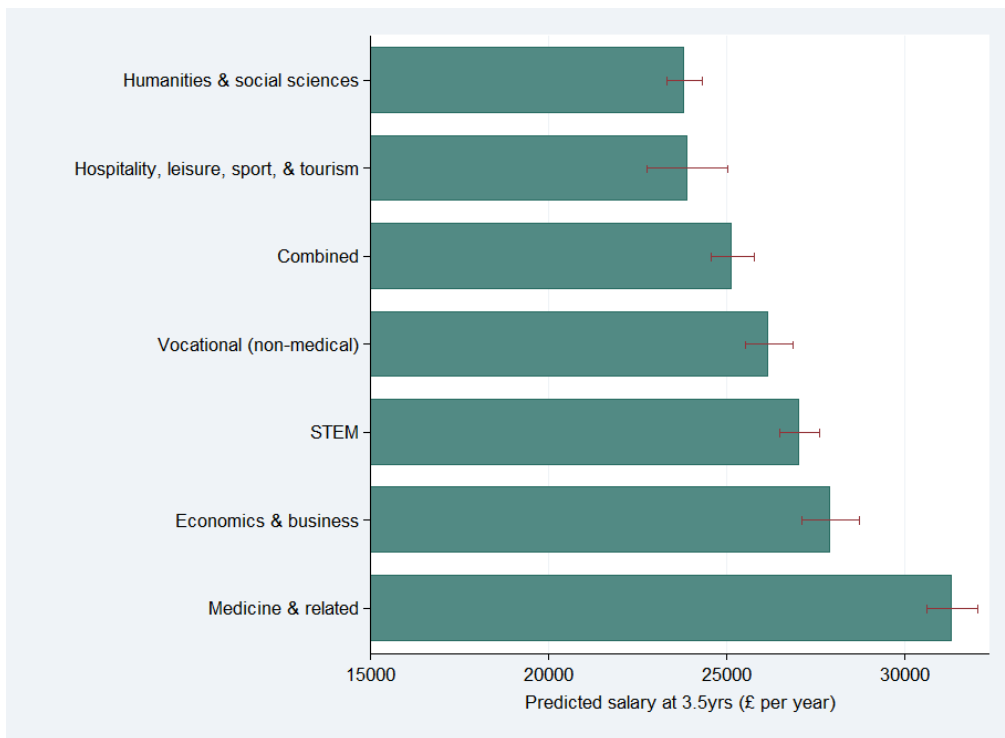**Figure 11 Mean graduate starting salaries by subject (adjusted)**

Note: Adjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Error bars are 95% confidence intervals. Salary estimates are adjusted for university type, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, parental occupation, and private school attendance.

At 3.5 years, adjusting for graduate characteristics and university type also somewhat alters the rank order of subjects, with humanities and social sciences becoming the joint lowest earning subjects with hospitality, leisure, sport, and tourism. Economics and business also becomes the second highest earning subject group, ahead of STEM (though the difference between these two subject groups is small - £868, or 3%).

The overall scale of the difference between subject groups is also somewhat reduced, with the gap between medicine and related subjects and the lowest earning subject reducing from £9,897 per year (45%) to £7,509 (32%).

Figure 12 Mean graduate salary at 3.5 years by degree subject (adjusted)

Note: Adjusted figures for all 2008/09 graduates in full-time work who had information on all relevant factors (N=9,330). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, private school attendance, and postgraduate education. Figures weighted using HESA sampling weights.
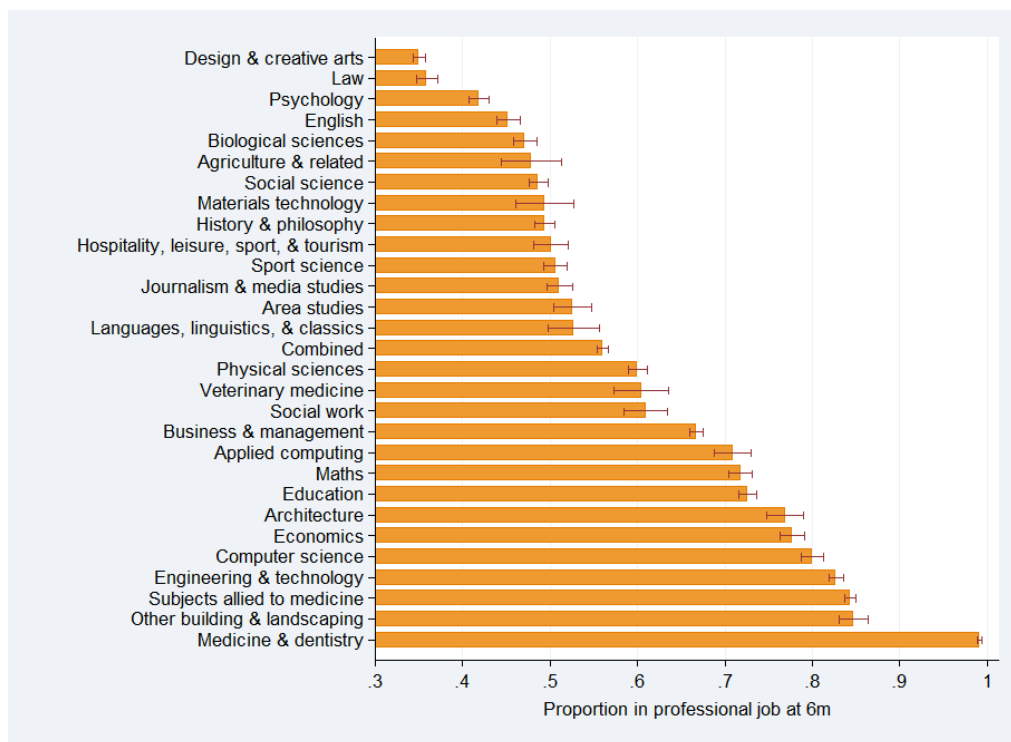
Likelihood of getting a professional job

Raw differences

Figure 13 gives the proportion of graduates from each subject in at least lower level professional employment six months after graduation. Overall, as would be expected, the same subjects associated with high average starting salaries are also associated with an increased likelihood of entering professional employment soon after graduation.

However, there are some notable differences. Despite architecture graduates in full-time work being among the lowest paid graduates, architecture graduates in general are among the most likely to be in professional employment. Similarly, journalism and media studies graduates are among the lowest paid, but are closer to the middle of the pack in terms of their likelihood of being in professional employment. This could be explained by the fact that some professional level jobs may be very low paid on entry (this may be particularly true in the case of journalism). Alternatively, the explanation may lie in the differing samples, as the earnings analysis was restricted to the subset of graduates who reported working full-time, whereas these figures also include part-time workers and those who are unemployed.

Figure 13 Proportion of graduates from each degree subject in higher or lower level professional jobs six months after graduation
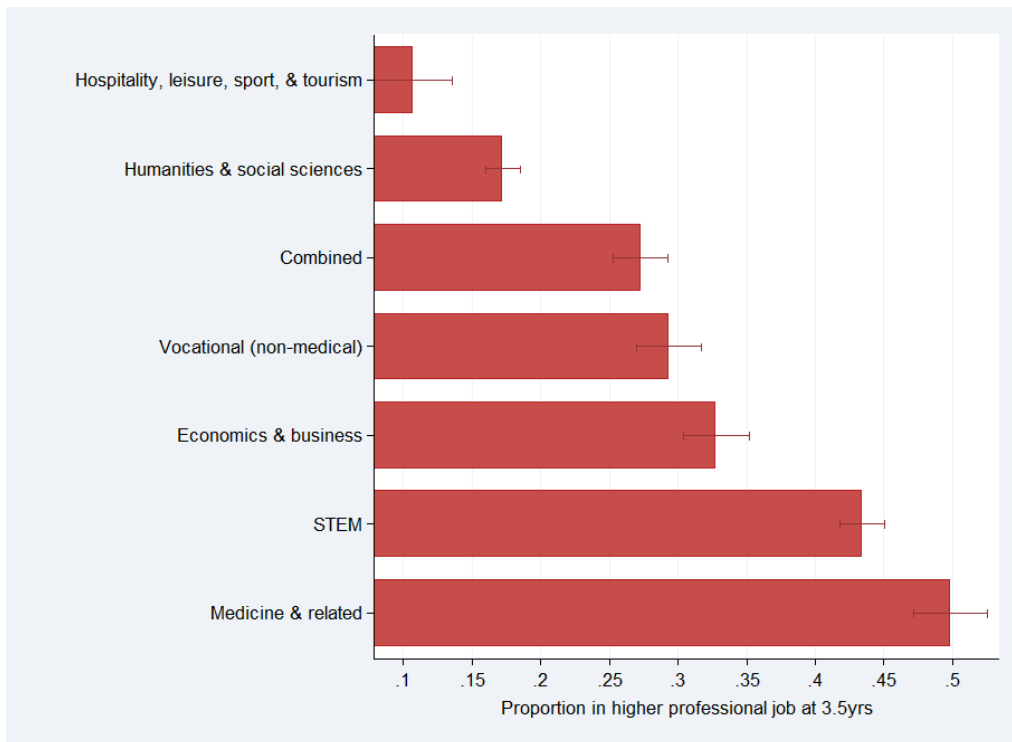

Note: Unadjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals

Figure 14 shows a similar gradient in access to higher level professional employment 3.5 years after graduation. Almost half of all graduates from STEM (43%) and medicine and related (50%) subjects[26] report being in professional level jobs; whereas this figure for humanities and social sciences graduates is only 17% (and for hospitality, leisure, sport, and tourism graduates it is only 11%).

---

[26] As noted in the Data and Methods section above, medicine and related subjects includes a number of graduates from non-clinical medicine courses, including nursing, optometry, and alternative medicine.

Figure 14 Proportion of graduates from each degree subject in higher professional jobs 3.5 years after graduation
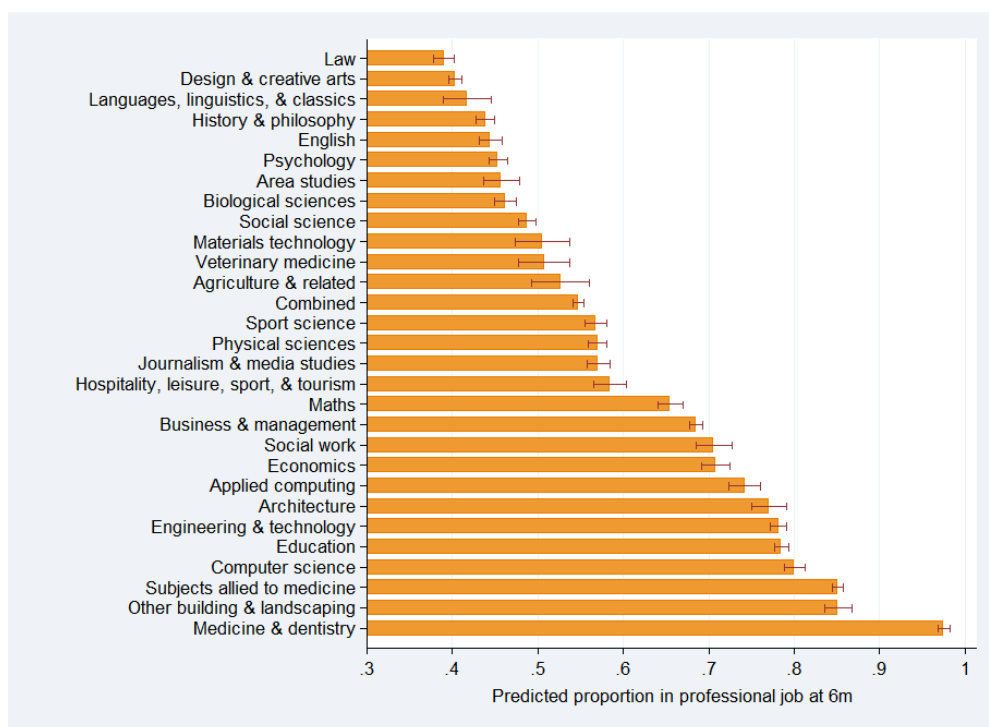

Note: Unadjusted figures for all 2008/09 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=21,440). Error bars are 95% confidence intervals. Figures weighted using HESA sampling weights.

Adjusted differences

Figure 15 shows that, as was the case with earnings, accounting for graduate characteristics and university type somewhat alters the rank order of subjects. Among the most notable changes is the movement of languages, linguistics, and classics from near the middle of the pack to near the bottom for graduate professional employment. This is likely due to the fact that students studying this subject are more likely to be from more advantaged backgrounds, and more likely to attend more selective universities. Again, as with earnings, another significant change is the improvement in the position of hospitality, leisure, sport, and tourism graduates. This is likely to be the converse of the languages, linguistics, and classics effect.

The position of law at the bottom of the distribution is initially appears highly surprising. However, as discussed in the earnings section this may be due to the high proportion of law graduates who are engaged in further study (who are again excluded from these analyses), along with the highly competitive nature of the law profession.
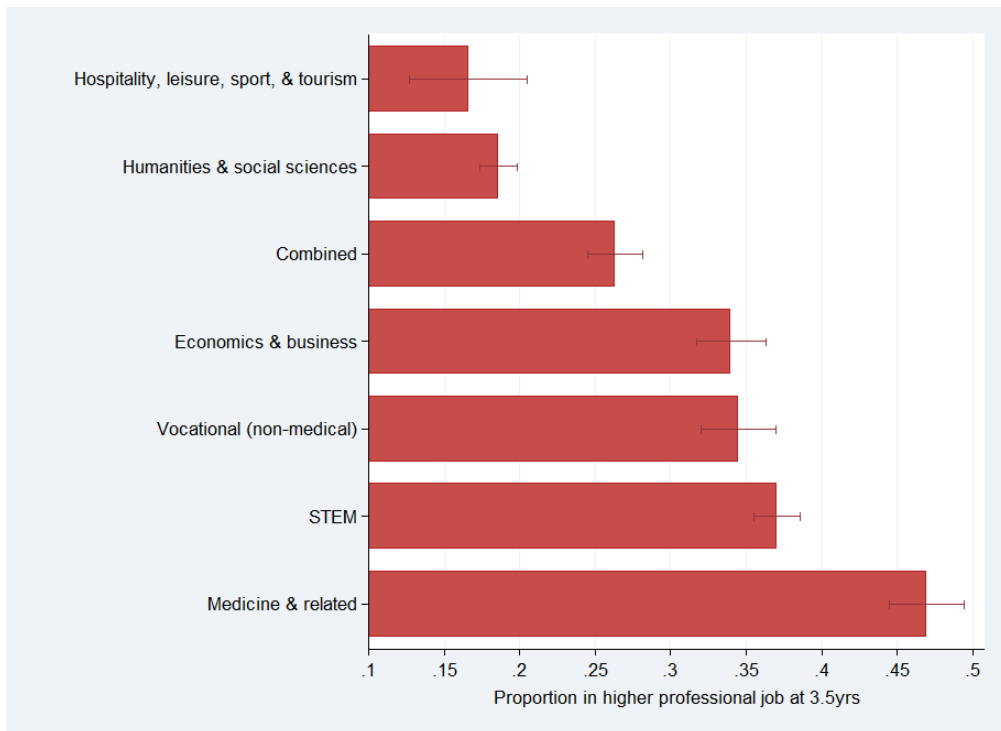
Figure 15 Proportion of graduates from each degree subject in higher or lower level professional jobs six months after graduation (adjusted)

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals. Figures are adjusted for university type, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, parental occupation, and private school attendance.

Figure 15 shows that the adjusted figures yield a different rank order of subjects. However, these figures show that economics and business graduates are less likely than STEM graduates to be in professional employment – contrary to the earnings results. This could be due to the average earnings of economics and business graduates being pulled up by very high earnings among some graduates (for example, those going on to careers in finance).

Figure 16 Proportion of graduates from each degree subject in higher professional jobs 3.5 years after graduation

Note: Adjusted figures for all 2008/09 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=21,440). Error bars are 95% confidence intervals. Figures are adjusted for university type, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, private school attendance, and postgraduate education. Figures weighted using HESA sampling weights.

This section describes differences in graduate outcomes between different degree subject and university combinations. Due to issues of sample size, these results are presented for the six month data only.

Earnings

Table 4 shows the average starting salary for graduates in each university type and degree subject combination (before accounting for differences in graduate characteristics). Due to the small number of graduates in some combinations, the higher order subject categories have been used. Even given this, there remain relatively few respondents in some categories, and given salary estimates should therefore be interpreted with caution. The number of respondents contributing to each average is given in brackets in each cell of the table.

Table 4 Mean graduate starting salary by degree subject and university type – figures in brackets are the number of graduates in each university type and degree combination (Unadjusted figures)

	Post-92	Pre-92	ST30	ST13	Oxbridge
Hospitality etc.	£16,761 (1,690)	£16,654 (205)	£17,683 (80)	£17,222 (70)	N/A (0)
Vocational (non-medical)	£19,201 (4,270)	£19,094 (735)	£19,266 (700)	£20,169 (400)	£20,952 (40)
Humanities & social sciences	£15,797 (7,150)	£16,965 (2,265)	£17,737 (2,615)	£18,918 (1,600)	£22,239 (385)
Medicine & related	£20,940 (2,560)	£22,758 (1,355)	£24,544 (2,050)	£24,834 (920)	£27,129 (285)
STEM	£19,333 (3,640)	£21,240 (2,075)	£22,091 (3,055)	£23,902 (2,050)	£27,570 (285)
Combined	£17,094 (2,820)	£18,943 (1,335)	£20,237 (1,950)	£21,594 (995)	£26,445 (220)
Economics & business	£18,955 (3,270)	£20,498 (995)	£22,177 (1,080)	£25,369 (580)	£32,378 (40)

Note: Unadjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720)

Table 5 shows these salaries after accounting for differences in graduate characteristics. This shows that graduates from economics and business degrees at Oxbridge universities have the highest average starting salaries at £30,899. However, this is a very small group, containing only 41 graduates, so should probably be discounted. The next highest earning graduates are those with combined degrees from Oxbridge. However, it is difficult to interpret the results for these graduates given that they may be studying a wide variety of course combinations.

Perhaps of most interest are Oxbridge STEM graduates, who earn starting salaries similar starting salaries to economics and business graduates from the next most selective university group (ST13).

Table 5 Mean graduate starting salary by degree subject and university type (adjusted) – figures in brackets are the number of graduates in each subject by university type combination

	Post-92	Pre-92	ST30	ST13	Oxbridge
Hospitality etc.	£17,432 (1,690)	£16,922 (205)	£17,514 (80)	£16,887 (70)	N/A (0)
Vocational (non-medical)	£20,157 (4,270)	£19,863 (735)	£19,534 (700)	£20,347 (400)	£20,301 (40)
Humanities & social sciences	£16,656 (7,150)	£17,260 (2,265)	£17,803 (2,615)	£18,586 (1,600)	£21,247 (385)
Medicine & related	£21,654 (2,560)	£21,208 (1,355)	£22,760 (2,050)	£22,181 (920)	£24,061 (285)
STEM	£19,319 (3,640)	£20,792 (2,075)	£21,704 (3,055)	£23,085 (2,050)	£24,728 (285)
Combined	£17,817 (2,820)	£18,846 (1,335)	£20,016 (1,950)	£20,611 (995)	£24,897 (220)
Economics & business	£19,243 (3,270)	£20,328 (995)	£21,674 (1,080)	£24,392 (580)	£30,899 (40)

Note: Adjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Salary estimates are adjusted for gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, parental occupation, and private school attendance. In accordance with HESA policy, counts of graduates have been rounded to the nearest five.

The lowest earning group are those studying humanities and social sciences at post-92 universities. However, taking graduate characteristics into account, this university type and subject combination yields similar returns to a degree in hospitality, leisure, sport and tourism from a pre-92 university.

There are other notable findings from the table. First, is that the rank order of subjects is not identical within each university group. Medicine and related subjects yield the highest returns for graduates from the majority of universities. However, in the most selective universities (ST13 and Oxbridge), returns are higher for STEM and economics and business degrees (noting the small number of graduates in the latter subject from Oxbridge).

Second are the relatively small differences across university types for some subjects, particularly for non-medical vocational subjects (which includes social work and education), where the gap between post-92 and ST13 graduates is only £190 (in fact, post-92 graduates are not the lowest earners for this subject, all else being equal). The gradient by university type is also relatively shallow for medicine and related subjects (compared with the overall earnings gradient seen in Figure 3), though there remains a gap of £2,407 between post-92 and Oxbridge graduates. Some of this is likely to be explained by subject choice within these larger subject groupings; for example, larger proportions of nursing (rather than clinical medicine) graduates from post-92 universities.

The largest gaps between university types can be seen in economics and business, STEM, and humanities and social science courses. For STEM courses there is a gap of £5,410 in starting salary between Oxbridge and post-92 graduates, and for humanities and social sciences courses this gap is £4,591.

Finally, also notable is that, all other things being equal, returns to some degrees from post-92 universities match or exceed those from other degrees at other institutions. For example, independent graduate characteristics, returns to non-medical vocational degrees at post-92 universities match or exceed those to humanities and social sciences at ST13 universities.

Likelihood of getting a professional job

Table 4 shows the estimated proportion of graduates from each university type and degree subject combination in lower or higher level professional employment six months after graduation. These figures are after accounting for differences in graduate characteristics.

These figures show a broadly similar pattern to that found for earnings, with the combinations yielding the highest levels of professional employment (excluding economics and business and combined degrees at Oxbridge) being economics and business courses at ST13 universities and STEM courses at Oxbridge. Once again, the least advantageous courses appear to be humanities and social sciences at post-92 universities.

Table 6 Proportion of graduates from each degree subject and university type combination in higher or lower level professional jobs six months after graduation (adjusted) – figures in brackets are the number of graduates in each subject by university type combination

	Post-92	Pre-92	ST30	ST13	Oxbridge
Hospitality etc.	53% (4,092)	52% (515)	59% (178)	65% (148)	N/A (0)
Vocational (non-medical)	65% (8,562)	61% (1,619)	60% (1,396)	62% (736)	59% (91)
Humanities & social sciences	40% (18,815)	46% (5,662)	50% (5,514)	55% (3,642)	64% (836)
Medicine & related	49% (6,414)	55% (2,883)	59% (3,893)	66% (1,956)	76% (370)
STEM	58% (7,357)	66% (3,843)	69% (5,172)	74% (3,469)	79% (443)
Combined	83% (4,391)	87% (2,388)	88% (3,764)	85% (1,561)	80% (415)
Economics & business	63% (6,346)	69% (1,957)	75% (1,953)	80% (1,097)	100% (56)

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Figures are adjusted for gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, parental occupation, and private school attendance.

To determine whether the returns associated with certain universities or degree subjects differed depending on graduates' social backgrounds, we divided respondents into groups according to three measures of social background: parental education (whether or not their parents had a higher education qualification), parental occupation (whether or not their parents had a professional job), and whether they attended a private secondary school.

All of the results reported below are adjusted for graduate characteristics and degree subject or university type.

Differences by university type

Earnings

Figure 17 shows the adjusted average starting salaries for graduates from each university type, separately for respondents with graduate parents and those without. Lines are plotted on the graph to help illustrate the difference between the points for each group. For example, a steep upward slope (from left to right) would indicate that, within this university group, graduates with graduate parents had substantially higher earnings than those without (all else being equal).
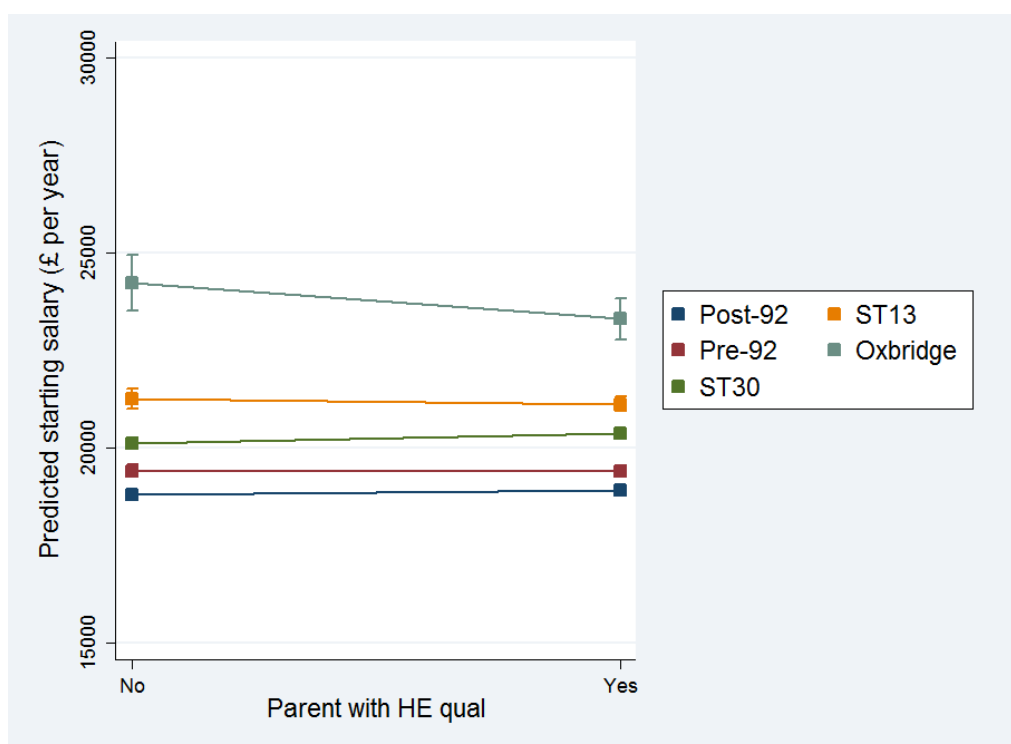
Examination of this figure shows that, for graduates from most universities, there is no difference in starting salary according to parental education. All else being equal, graduates whose parents are graduates do not tend to earn significantly higher or lower starting salaries than graduates whose parents do not have higher level qualifications. Put another way, the returns associated with a degree from most university types do not differ depending on social background (as measured by parental education).

The exception to this pattern is Oxbridge, where graduates whose parents do not have HE qualifications actually tend to earn *higher* starting salaries. This effect is not large (a difference of around £927, or 4%), but it is statistically significant.

This is an interesting result in that it reverses the typical earnings advantage of those from better off backgrounds. However, it is consistent with the finding of a recent HESA study showing that, holding constant previous achievement, students entering university from state schools tended to outperform their private school counterparts in terms of their eventual degree classification. We have accounted for degree classification in this analysis. The underlying process may be similar –those from more disadvantaged backgrounds who, in this case, have managed to gain entry into one of the two most selective universities in the country, may have a quality which drives them to gain greater success in the graduate labour market.

Examination of the data for 2008/09 graduates 3.5 years after graduation yields a similar result. These data did not contain a measure of parental education. However, ST13 graduates whose parents had non-professional occupations tended to earn slightly, though significantly, more than those whose parents had professional jobs (figures given in Appendix D, Figure D1). Given that we were unable to adjust for parental education in the 3.5 year analysis it is possible that this effect is driven by the association between parental education and occupation. This interpretation is supported by the fact that, in the six month data (where we are able to adjust for parental education) there is no similar effect of parental occupation.

Figure 17 Mean graduate starting salary by university type and parental education (adjusted)

Note: Adjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, and private school attendance.
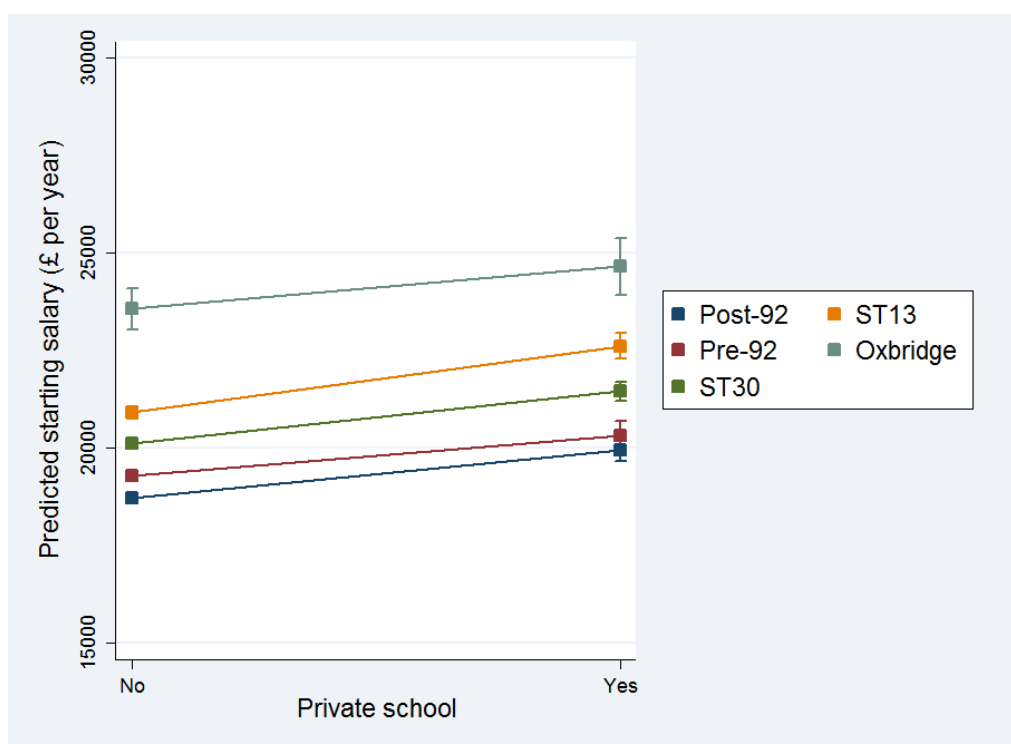
Figure 18 shows the adjusted average starting salaries for graduates from each university type, broken down by whether the respondent attended a private secondary school. Contrary to the results for parental education and profession, having attended a private secondary school appears to exert a generally positive effect on earnings for graduates from all university groups. Taking all university types together, graduates who had attended private secondary schools started on salaries on average £1,350 higher than their state school counterparts. Note that this is after adjusting for university type, degree subject, degree class, A-level attainment, and other aspects of social background.

These results are consistent with previous Sutton Trust research showing an enduring advantage of private school education[27] and with research showing that private school graduates are significantly more likely to obtain the most prestigious jobs after university, independent of their degree subject, university or ability.[28]

---

[27] Hupkau et al. (2014). Open Access: An Independent Evaluation. *The Sutton Trust* [available at: http://www.suttontrust.com/researcharchive/open-access-independent-evaluation/]

[28] Macmillan, L., Tyler, C., & Vignoles, A. (2014). Who Gets the Top Jobs? The Role of Family Background and Networks in Recent Graduates' Access to High-status Professions. *Journal of Social Policy,* DOI: http://dx.doi.org/10.1017/S0047279414000634

Figure 18 Mean graduate starting salary by university type and school type (adjusted)

Note: Adjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, and parental occupation.

Examining the same results for 2008/09 graduates at 3.5 years, the advantage of private education is substantially reduced (and is not statistically significant) for any individual university group with the exception of ST13 (figures given in Appendix D, Figure D2). However, taking all graduates together, there remains a significant earnings advantage associated with having attended private school (£1,285 per year, all else being equal).

Likelihood of getting a professional job

Examining the association between university type and the likelihood of attaining a professional job for graduates from different social backgrounds shows results very similar to those found for earnings. Six months after graduation, 2012/13 graduates from Oxbridge and ST13 universities whose parents did not have degrees had a slightly higher likelihood of being in lower or higher level professional jobs (figures in Appendix D, Figure D3). However these differences were small: 76% compared with 73% for Oxbridge graduates, and 69% versus 68% for ST13 graduates. As was the case for earnings, there were no other differences by parental education for any other university group.

A similar pattern was found for graduates from professional and non-professional backgrounds, with Oxbridge graduates whose parents had professional jobs having a slight advantage in access to professional employment six months after graduation (figures in Appendix D, Figure D4).

However, contrary to the results found for earnings, this reversed social gradient did not extent to 2008/09 graduates 3.5 years after graduation. In fact, all else being equal, there was a general (slight) advantage for graduates from professional backgrounds in access to higher professional employment, with graduates from professional backgrounds around 2 percentage points more likely to be in these types of jobs 3.5 years post-graduation (figures in Appendix D, Figure D5).

This advantage for those from more advantaged backgrounds was also present, and substantially larger, with respect to private secondary education. For 2012/13 graduates at six months, the private school advantage is largest for pre- and post-92 and ST13 graduates (around nine percentage points), and smallest for Oxbridge and ST30 graduates (around 3-4 percentage points). Taking all universities together (all other things being equal) graduates who attended private secondary schools were seven percentage points more likely than graduates from state schools to go on to professional employment (66% versus 59%). This generalised advantage was also observed for 2008/09 graduates 3.5 years after graduation (figures in Appendix D, Figures D6 and D7). This is consistent with the recent findings of Macmillan and colleagues.[29]

---

[29] Macmillan, L., Tyler, C., & Vignoles, A. (2014). Who Gets the Top Jobs? The Role of Family Background and Networks in Recent Graduates' Access to High-status Professions. *Journal of Social Policy,* DOI: http://dx.doi.org/10.1017/S0047279414000634

Differences by degree subject

Earnings

Examining the differences in earnings by degree subject for graduates from different social backgrounds yielded very similar results to those found for differences by university type. For the most part, after accounting for university type and graduate characteristics, there were no substantive differences in the returns to a given degree subject depending on parental education or profession at six months (figures in Appendix D, Figures D8 and D9). The exception was for business and economics courses, where graduates whose parents were graduates or who had professional jobs were at a slight earnings advantage. However, these differences were very small (around 3%). We found similar results for 2008/09 graduates 3.5 years post-graduation (figures in Appendix D, Figure D10).

As before, the results by degree subject showed a relatively consistent earnings advantage for graduates from private school backgrounds (for 2012/13 graduates at six months). This advantage was particularly notable for economics and business graduates. The exceptions here were medicine and related subjects. All else being equal, returns to these subjects were not higher for graduates who had attended private secondary schools (figures in Appendix D, Figure D11).

For 2008/09 graduates 3.5 years after graduation, the private school advantage was only present for graduates from economics and business and combined courses, and was absent for all other course types (figures in Appendix D, Figure D12).

Likelihood of getting a professional job

The results for access to professional employment were very similar to those for earnings. There were few differences by parental education or occupation at six months. The exception was for economics and business graduates, for whom there was a slight access advantage for those whose parents had professional jobs or were HE educated (figures in Appendix D, Figures D13 and D14). However, contrary to the earnings results, larger differences emerged by parental occupation for 2008/09 graduates 3.5 years after graduation. Here the access advantage for those from professional backgrounds extended to graduates from medical and related courses and combined courses (figures in Appendix D, Figure D15).

Again, as with earnings, private school attendance conferred a general advantage in accessing professional employment for graduates from most degree subjects, at both six months and 3.5 years (figures in Appendix D, Figures D16 and D17). Again, there was an exception for medicine and related subjects with respect to entry into lower or higher professional employment at six months (though not with respect to entry into higher professional jobs at 3.5 years, where there was a notable private school advantage among graduates from these subjects). Another notable difference for 2008/09 graduates at 3.5 years was that there was no private school advantage for graduates from STEM subjects.

SUMMARY AND CONCLUSIONS

This report has demonstrated that there are substantial differences in graduate outcomes between different universities and different degree subjects. These differences can be seen both among new graduates and among those who have been in the labour market for several years.

Some of these differences are explained by the fact that certain subjects are more likely to be studied at particular types of university. Some are explained by other differences between graduates. For example, students of higher ability or from more advantaged backgrounds are more likely to study particular subjects at more selective universities. These students would likely have achieved better graduate outcomes in any case, and this explains some of the apparent differences between universities and courses.

However, the factors we examined (primarily age, gender, social background, region of origin, and A-level results) do not completely explain the differences in graduate outcomes. Even after accounting for these factors, there remain large differences between universities and degree courses.

Between universities

Before accounting for graduate characteristics and degree choice, there was a difference in starting salary of approximately £4,300 between graduates from Oxbridge and graduates from post-92 universities. Oxbridge graduates also earned a premium of £3,200 over graduates from other selective universities in the ST13.

After holding graduate characteristics and degree choice constant, the starting salary premium for Oxbridge graduates compared to post-92 graduates remained at nearly £5,000 per year (£4,760), and their advantage over other ST13 graduates remained at £2,500. Accounting for these factors, Oxbridge graduates are also substantially more likely to go on to professional jobs immediately after university. 74% of students graduating from Oxford or Cambridge are in professional employment six months after graduation, compared with 55% of graduates from post-92 universities.

There are also small but substantive differences between other universities. All else being equal, each step from post-92 to pre-92 to ST30 to ST13 yields around another £800 in starting salary and an additional 4-5 percentage point increase in the likelihood of going on to professional employment.

These differences are also present 3.5 years after graduation. Before accounting for any other factors, graduates from the 13 most selective universities (including Oxford and Cambridge) are earning salaries approximately £7,000 per year higher than their peers from post-92 institutions, and are 26 percentage points more likely to be in higher professional employment. Holding other factors constant, these differences are £4,300 and 12 percentage points, respectively.

Between degree subjects

All other things being equal, the five highest earning subjects by starting salary were medicine and dentistry, engineering and technology, economics, computer science, and education. The five lowest earning subjects were psychology, English, design and creative arts, biological sciences, and history and philosophy.

The differences between these subjects were pronounced. Without accounting for any other factors, medicine and dentistry graduates earn starting salaries around £12,200 higher than graduates from design and creative arts or psychology courses. After taking into account graduate characteristics and university attended, this difference is remains around £8,000.

Interestingly, some courses which have low average starting salaries in absolute terms, such as hospitality, leisure, sport, and tourism, and appear more beneficial once university type and social background are taken into account. The opposite is true for courses which tend to taken by students from more advantaged backgrounds such as languages, linguistics, and classics; and history and philosophy.

After 3.5 years, similar subjects remain at the top and bottom of the earnings spectrum, with graduates from medicine and related courses earning around £9,900 more per year than graduates from humanities and social science courses before accounting for other factors. After accounting for other factors, this difference is approximately £7,500.

Differences in professional employment are even larger. All else being equal, engineering and technology graduates are 47 percentage points more likely to be in professional employment six months after university than are graduates from design and creative arts courses.

Certain combinations of subject and university appear to be particularly beneficial, with earnings for graduates from economics and business courses at the most selective institutions outstripping even the earnings of graduates from medical and related courses at these (and other) institutions.

Differences by social background

There are important differences in graduate outcomes according to social background. Consistent with findings from previous research, students who attended private secondary schools have a continuing advantage over other students, even after taking into account the nature and outcome of their degree.

Independent of their degree class, degree subject, A-level results, and which university they attended, privately educated graduates had, on average:

- Starting salaries £1,350 higher than graduates who attended state schools
- Salaries £1,285 higher at 3.5 years
- A seven percentage point higher likelihood of being in at least lower professional employment six months after graduation
- A six percentage point higher likelihood of being in a higher professional job 3.5 years after graduation

However, there were also circumstances in which students from less advantaged social backgrounds did particularly well. All other things being equal, Oxbridge graduates whose parents did not go to university tend to have higher starting salaries than their compatriots whose parents did go to university – to the tune of around £1,000 per year.

This effect can also be seen for Sutton Trust 13 graduates after 3.5 years, with graduates from less educationally advantaged backgrounds earning a £2,500 premium over their more advantaged counterparts.

Conclusions

This report clearly shows that, for students, both the subject they study and the university they attend matter for their career outcomes. Graduates from more selective universities, and from courses like medicine, engineering, economics, and computer science, earn more on average, and are more likely to go on to a professional job, than are those graduating from less selective universities, or from courses in the arts, humanities, or social sciences. This is true even after taking into account students' pre-university achievement and social background.

Of course, a university degree is not only a means to the end of higher earnings or a professional job. However, prospective students and their teachers should consider graduate outcomes when deciding on which course to study, and where to apply. This is particularly true given the fact that tuition fees for many courses are identical, regardless of graduate outcomes.

The report also shows that, in most cases, graduates from more and less advantaged backgrounds (in terms of parental education or occupation) go on to do equally well after graduation. For graduates from the most elite institutions, this social gradient is even reversed, with graduates from less advantaged backgrounds going on to do somewhat **better** than their more advantaged peers.

Taken together, these findings highlight the key role that university education can play in improving social mobility, and reinforce the crucial importance of widening access to the most elite institutions – where recent figures have suggested there is still an almost ten-fold access gap between students from the most and least advantaged backgrounds.[30]

The apparent exception to the levelling effect of a university degree is in the case of students from the most highly advantaged backgrounds – the small proportion who attended private schools. These students generally have better graduate outcomes, regardless of the circumstances of their degree. It is important for future research to identify the source of this advantage, whether it is the result of superior social networks, increased confidence and aspirations, or financial support through the difficult process of beginning a career. Answers to this question will help begin the process of spreading these advantages to students from non-privileged backgrounds.

---

[30] Independent Commission on Fees (2014). Analysis of trends in higher education applications, admissions, and enrolments [available at: http://www.independentcommissionfees.org.uk/wordpress/wp-content/uploads/2014/08/ICoF-Report-Aug-2014.pdf]

Appendix A: Variable coding

Earnings

In the data provided by HESA, earnings were given in £5,000 intervals (£0-4,999; £5,000-£9,999 etc.) from 0 to £70,000 or more. We re-coded this variable to a continuous scale using the interval midpoints. Consistent with this, we coded the £70,000+ interval as £72,500. It is possible that some respondents reporting salaries in excess of £70,000 earned significantly more that this amount. However, these respondents were few in number (0.08% of the six month analysis sample, and 1.75% of the 3.5 year analysis sample), and the effect on the overall results is therefore unlikely to be substantial. To confirm this, the analyses were re-run using an alternative form of analysis to account for uncertainty within intervals (see Appendix B below). The proportion of respondents in each earnings category is given in Table A1, below:

Table A1 Proportion of leavers in full-time work in each earnings bracket

	6 months	3.5 years
£5,001-£10,000	3.37%	2.20%
£10,001-£15,000	21.88%	6.55%
£15,001-£20,000	30.19%	16.37%
£20,001-£25,000	27.85%	24.75%
£25,001-£30,000	10.86%	23.25%
£30,001-£35,000	3.67%	10.87%
£35,001-£40,000	1.18%	6.20%
£40,001-£45,000	0.52%	4.17%
£45,001-£50,000	0.23%	2.20%
£50,001-£55,000	0.07%	0.62%
£55,001-£60,000	0.06%	0.55%
£60,001-£65,000	0.02%	0.32%
£65,001-£70,000	0.02%	0.20%
£70,000+	0.08%	1.75%
Observations	*53,720*	*9,328*

The earnings analyses were restricted to those reporting their main activity as full-time work. We also excluded all respondents in full-time work who reported a salary of less than £5,000 per year. This means that our findings on earnings are specifically applicable to graduates who leave work and go on to a full-time job – graduates who are engaged in further study, looking after the home or family, who are unemployed, or engaged in some other activity (such as travelling) are excluded. Methods are available to attempt to estimate differences in earnings across such populations. However, these are very difficult to apply in cases where no appropriate instrumental variable is available, as is the case with the present data.

Professional employment

The data provided by HESA contained information on occupations defined using the HESA five digit version of the 2010 Standard Occupational Classification (SOC2010).[31] We coded these occupational classes into NS-SEC analytical classes using the method described in the ONS Standard Occupational Classification 2010 user manual.[32]

In the six month analyses we examined access to higher or lower professional jobs, defined as the first three NS-SEC analytical classes (1.1, 1.2, and 2). In the 3.5 year analyses we examined access to higher professional jobs, defined as the first two NS-SEC analytical classes (1.1 and 1.2).

University type

The data provided by HESA contained information on the specific university attended by each respondent. We grouped these universities into types as described in the Data and Methods section above. Small specialist colleges, education colleges, and conservatoires were classed as post-92 institutions. Colleges recorded as separate institutions, but which were part of a larger university were given the same coding as their parent institution.

Degree subject

HESA provided data on three possible subjects for each respondents, coded using their JACS3 subject code (two digit).[33] We manually grouped these subjects into the 29 subject groups reported in the main text. Specific details of the coding scheme used are available from the author on request.

Covariates

- **Gender** was coded as a binary indicator of male/female.

- In the six month analyses, **age** was coded as a binary variable indicating whether the respondent was over the age of 21. In the 3.5 year analyses, age was coded as a categorical variable with three levels (22-25, 26-29, 30+).

- In the six month data, **degree classification** was coded as a categorical variable with five levels (1st, 2:1, 2:2, 3rd/pass, unclassified). To preserve statistical power, these levels were collapsed to three categories in the 3.5 year analyses (1st, 2:1, 2:2 or below).

- **Mode of study** was coded as a binary variable indicating whether the respondent had studied their qualification full or part-time.

- The area in which the respondent lived prior to the beginning of their course (**domicile**) was coded according to their Government Office Region.

- **School exam performance** prior to leaving secondary school was coded using UCAS tariff points (continuous variable).

- In the six month analyses **Parental education** was coded as a binary variable indicating whether at least one of the respondent's parents had a higher education qualification prior to the start of the respondent's degree. This variable was not available in the 3.5 year data.

---

[31] More details can be found at https://www.hesa.ac.uk/content/view/2521

[32] ONS (2010). Standard Occupational Classification 2010, Volume 3, The National Statistics Socio-economic Classification: (Rebased on the SOC2010) User Manual [available at: http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html]

[33] More details can be found at https://www.hesa.ac.uk/jacs3

- **Parental occupation** was coded as a binary variable indicating whether the respondent's highest earning parent or guardian had a professional job prior to the start of the respondent's course (or, for respondents who were aged 21 or over at the beginning of their course, whether they themselves had a professional job). Professional occupations were defined as those in the top two classes in the single digit HESA version of the 2010 Standard Occupation Classification (corresponding to higher and lower managerial and professional occupations).

- **Private school attendance** was coded as a binary variable indicating whether the respondent had attended a private (fee-paying) secondary school.

- In the 3.5 year analyses, **further qualifications** were coded as a binary variable indicating whether the respondent had gained a higher degree (Master's or PhD) since completing their original course. This variable was not included in the six month analyses.

Appendix B: Modelling strategy

Earnings

Earnings differences after accounting for other potential covariates were estimated using Ordinary Least Squares (OLS) regression models, including the covariates described above. As a sensitivity analysis, earnings were also modelled using interval regression. The results from this were not substantively different from those produced by the OLS model. The estimation sample was restricted to UK domiciled graduates from first-degree programs (excluding the Open University) who reported their main activity as 'full-time employment'.[34]

For the six-month analysis, this yielded an estimation sample of 139,980 respondents. 51,370 of these respondents did not provide information on their salary, leaving 88,610. Of these 34,840 were missing information for one or more of the relevant covariates. These cases were excluded from the analyses (listwise deletion), leaving a final estimation sample of 53,770 respondents. As a subsequent sensitivity analysis, the analyses we re-run using dummy values for missing data on key covariates, allowing incomplete cases to be included in the models. This did not substantively alter the model results.

For the 3.5 year analysis, 17,970 respondents fit the main eligibility criteria. Of these, 13,610 provided salary information, and 9,330 had complete information on all relevant covariates.

Due to the fact that these sample sizes represent a reasonable proportion of a finite population of graduates (particularly for the six month analyses), standard errors were adjusted using a finite population correction. The populations used for these corrections were calculated as follows.

- Six month analyses: HESA figures give the number of UK domiciled, first degree graduates (excluding the Open University) in 2012/13 as 314,935. Of these, 55.52% were assumed to be in full-time work at six months based on the proportion in full-time work in the six month DLHE sample, giving an underlying population of 174,850 graduates

- 3.5 year analyses: HESA figures give the number of UK domiciled, first degree graduates (excluding the Open University) in 2008/09 as 266,720. Of these 46.61% were assumed to be in full-time work based on the proportion of 2008/09 graduates in full-time work in the 3.5 year DLHE sample, giving an underlying population of 124,320

Due to the sampling procedure employed by the 3.5 year DLHE survey, all estimates were also weighted using a sampling weight provided by HESA.

Professional employment

The likelihood of being employed in a professional job was estimated using logistic regression models, including the covariates described above. The estimation sample was restricted to UK domiciled graduates from first-degree programs (excluding the Open University) who reported their main activity as 'full-time employment', 'part-time employment' or 'unemployed'.

---

[34] Raw earnings were used in the regression models as opposed to the more conventional logarithm of earnings. When examining returns to education, the logarithm of earnings is often used to account for the likely non-linear relationship between additional levels of education and earnings potential. For example, an increase in education from secondary to further education is not likely to provide the same increase in earnings as an increase from further to higher education. However, we felt that when making direct comparisons between university types and degree subjects at the same level of education, a more straightforward comparison of raw earnings was appropriate.

For the six-month and 3.5 year analyses the complete case estimation samples were 111,535 and 21,440, respectively. The underlying populations used for the finite population corrections were 314,935 and 266,720, respectively.

Appendix C: Regression results tables

Table C1. Effect (unstandardized β coefficients and standard errors) of university type, degree subject, and covariates on reported earnings (£ per year) for 2012/13 graduates six months after graduation (N=53,770)

VARIABLES	β	SE
Degree Type		
Post-92 (reference)	-	-
Pre-92	553.2***	(63.20)
ST30	1,412***	(64.95)
ST13	2,306***	(88.08)
Oxbridge	4,760***	(228.3)
Subject		
Medicine & dentistry	5,506***	(222.8)
Subjects allied to medicine	2,405***	(120.6)
Biological sciences	-2,062***	(155.9)
Sport science	-1,587***	(167.4)
Psychology	-2,463***	(136.1)
Veterinary medicine	-434.9	(264.7)
Agriculture & related	456.2	(276.0)
Physical science (reference)	-	-
Maths	1,831***	(181.3)
Engineering & technology	4,122***	(139.3)
Computer science	2,867***	(177.8)
Applied computing	1,575***	(259.0)
Materials technology	1,107*	(477.1)
Architecture	-1,876***	(181.5)
Other building & landscaping	2,123***	(223.2)
Social science	-1,220***	(142.1)
Economics	3,518***	(235.1)
Social work	2,538***	(242.5)
Law	-1,032***	(157.3)
Business & management	883.3***	(127.9)
Hospitality, leisure, sport, & tourism	-822.4***	(202.7)
Journalism & media studies	-1,602***	(152.3)
Languages, linguistics, & classics	-1,975***	(347.8)
English	-2,460***	(153.1)
Area studies	-1,894***	(213.6)
History & philosophy	-1,989***	(156.8)
Design & creative arts	-2,346***	(126.9)
Education	2,596***	(131.3)
Combined	-235.1	(121.3)
Mature student	2,113***	(177.3)
Male	1,318***	(48.08)
Degree class		
1st	1,349***	(55.49)
2:1 (reference)	-	-
2:2	-788.6***	(58.43)
3rd/Pass	-1,345***	(153.4)
Unclassified	2,386***	(185.9)
Full time course	-997.0***	(214.6)
Domicile (GOR)		

Channel Islands	408.8	(458.3)
East Midlands	-1,785***	(96.61)
East of England	-590.1***	(93.11)
Isle of Man	-989.3	(571.9)
London (reference)	-	-
North East	-1,704***	(129.4)
North West	-1,675***	(89.64)
Northern Ireland	-1,917***	(128.0)
Scotland	-396.8***	(112.1)
South East	-373.4***	(85.29)
South West	-1,112***	(96.55)
Wales	-1,645***	(129.4)
West Midlands	-1,512***	(94.81)
Yorkshire and The Humber	-1,911***	(96.30)
Parent with professional job	209.6***	(44.92)
Parent with HE qual	73.8	(44.99)
Private school	1,351***	(81.81)
UCAS tariff points	2.6***	(0.243)

*$p<0.05$; **$p<0.01$; ***$p<0.001$. Standard errors are corrected for finite population (174,580)*

Table C2. Effect (unstandardized β coefficients and standard errors) of university type, degree subject, and covariates on reported earnings (£ per year) for 2008/09 graduates 3.5 years after graduation (N=9,330)

VARIABLES	β	SE
University type		
Post-92 (reference)	-	-
Pre-92	527.7	(313.4)
ST30	2,303***	(309.5)
ST13	3,677***	(377.5)
Degree subject		
Humanities & social sciences	-3,654***	(321.6)
STEM (reference)	-	-
Economics & business	569.0	(389.0)
Medicine & related	4,430***	(388.5)
Vocational (non-medical)	-846.3*	(417.8)
Hospitality, leisure, sport, & tourism	-3,359***	(659.0)
Combined	-1,814***	(365.2)
Age group		
22-25 (reference)	-	-
26-29	2,605***	(238.9)
30+	2,576*	(1,038)
Male	3,278***	(229.1)
Degree class		
First	1,884***	(297.6)
2:1 (reference)	-	-
2:2 or lower	-297.0	(250.2)
Full time course	-266.8	(952.4)
Domicile (GOR)		
North East	-342.0	(705.4)
North West	-697.2	(512.4)
Yorkshire & The Humber	518.2	(546.7)
East Midlands	374.2	(557.3)
West midlands (reference)	-	-
East	1,158*	(507.9)
London	2,620***	(501.9)
South East	1,836***	(465.1)
South West	654.8	(530.4)
NI	-921.5	(565.0)
Scotland	752.1	(529.8)
Wales	-853.3	(597.0)
Guernsey, Jersey, & Isle of Man	1,511	(1,923)
Higher postgraduate degree	-3,544***	(523.1)
Parent with professional job	846.3***	(214.7)
Private school	1,163***	(339.1)
UCAS tariff points	531.8***	(67.05)

*$p<0.05$; **$p<0.01$; ***$p<0.001$. Standard errors are corrected for finite population (124,320).
Estimates weighted using HESA sampling weights

Table C3. Effect (odds ratios and standard errors) of university type, degree subject, and covariates on the likelihood of being in higher or lower level professional employment, for 2012/13 graduates six months after graduation (N=111,535)
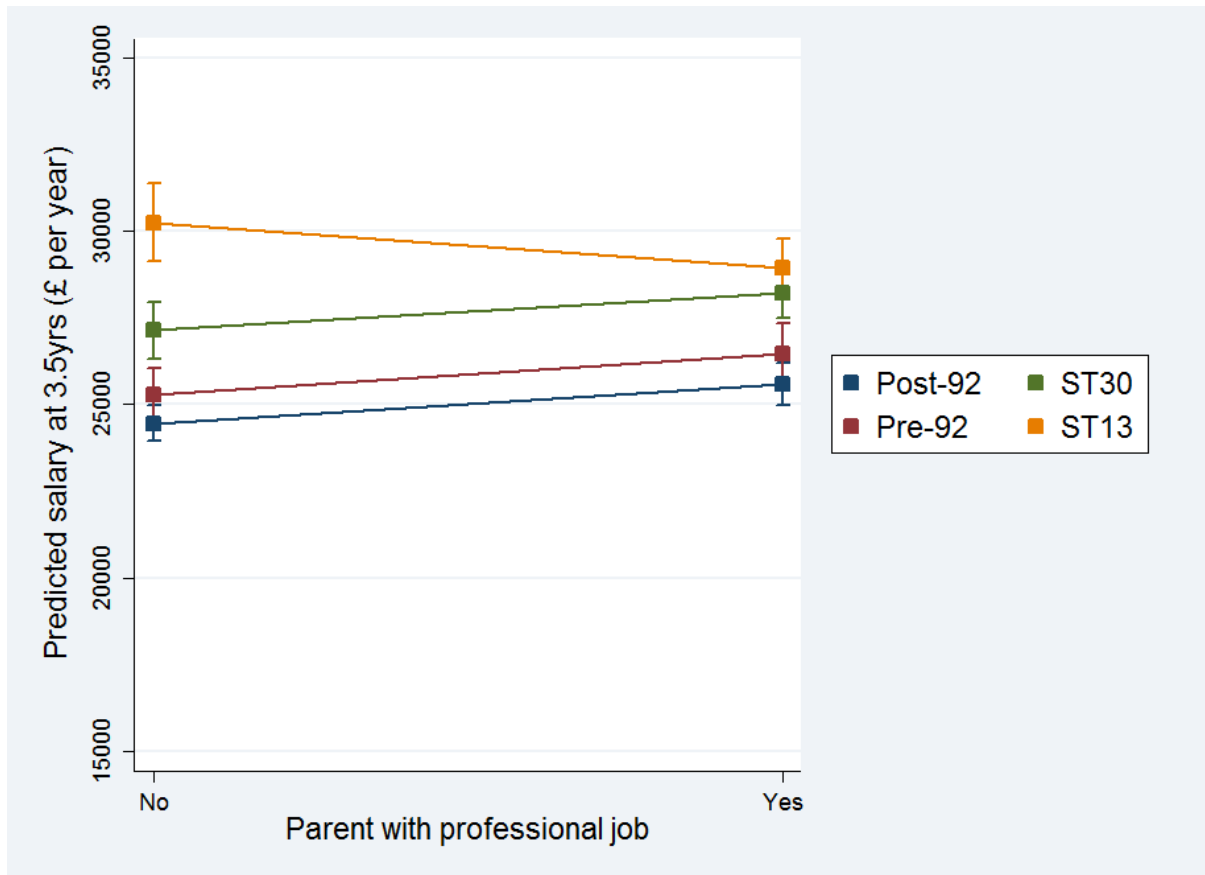
VARIABLES	OR	SE
Degree Type		
Post-92 (reference)	-	-
Pre-92	1.29***	(0.02)
ST30	1.54***	(0.03)
ST13	1.91***	(0.04)
Oxbridge	2.64***	(0.13)
Subject		
Medicine & dentistry	33.24***	(5.24)
Subjects allied to medicine	4.67***	(0.17)
Biological sciences	0.63***	(0.02)
Sport science	0.99	(0.04)
Psychology	0.61***	(0.02)
Veterinary medicine	0.76***	(0.05)
Agriculture & related	0.83*	(0.06)
Physical science (reference)	-	-
Maths	1.47***	(0.06)
Engineering & technology	2.87***	(0.11)
Computer science	3.24***	(0.15)
Applied computing	2.28***	(0.13)
Materials technology	0.76***	(0.06)
Architecture	2.68***	(0.18)
Other building & landscaping	4.69***	(0.34)
Social science	0.70***	(0.02)
Economics	1.91***	(0.09)
Social work	1.89***	(0.11)
Law	0.46***	(0.02)
Business & management	1.70***	(0.05)
Hospitality, leisure, sport, & tourism	1.07	(0.05)
Journalism & media studies	1.00	(0.04)
Languages, linguistics, & classics	0.52***	(0.03)
English	0.58***	(0.02)
Area studies	0.62***	(0.03)
History & philosophy	0.57***	(0.02)
Design & creative arts	0.49***	(0.01)
Education	2.93***	(0.11)
Combined	0.91***	(0.02)
Mature student	1.55***	(0.07)
Male	1.25***	(0.01)
Degree class		
1st	1.53***	(0.02)
2:1 (reference)	-	-
2:2	0.72***	(0.01)
3rd/Pass	0.57***	(0.02)
Unclassified	1.79***	(0.09)
Full time course	1.00	(0.05)
Domicile (GOR)		
Channel Islands	1.15	(0.16)
East Midlands	1.10***	(0.03)

East of England	1.19***	(0.03)
Isle of Man	1.51	(0.35)
London (reference)	-	-
North East	0.90***	(0.03)
North West	0.95*	(0.02)
Northern Ireland	0.93*	(0.03)
Scotland	1.00	(0.03)
South East	1.18***	(0.02)
South West	1.06*	(0.03)
Wales	0.91**	(0.03)
West Midlands	1.10***	(0.03)
Yorkshire and The Humber	1.01	(0.02)
Parent with professional job	1.14***	(0.01)
Parent with HE qual	1.05***	(0.01)
Private school	1.49***	(0.03)
UCAS tariff points	1.00***	(0.00)

*$p<0.05$; **$p<0.01$; ***$p<0.001$. Standard errors are corrected for finite population (314,935)*

Table C4. Effect (odds ratios and standard errors) of university type, degree subject, and covariates on the likelihood of being in higher level professional employment, for 2008/09 graduates six months after graduation (N=21,440)

VARIABLES	OR	SE
University type		
Post-92 (reference)	-	-
Pre-92	1.47***	(0.09)
ST30	1.95***	(0.11)
ST13	2.00***	(0.14)
Degree subject		
Humanities & social sciences	0.35***	(0.02)
STEM (reference)	-	-
Economics & business	0.86*	(0.06)
Medicine & related	1.59***	(0.11)
Vocational (non-medical)	0.88	(0.07)
Hospitality, leisure, sport, & tourism	0.30***	(0.05)
Combined	0.57***	(0.04)
Age group		
22-25 (reference)	-	-
26-29	1.60***	(0.07)
30+	0.99	(0.19)
Male	1.76***	(0.07)
Degree class		
First		
2:1 (reference)	1.29***	(0.07)
2:2 or lower	0.93	(0.04)
Full time course	1.61*	(0.32)
Domicile (GOR)		
North East	1.21	(0.16)
North West	0.90	(0.09)
Yorkshire & The Humber	1.00	(0.10)
East Midlands	1.10	(0.12)
West midlands (reference)	-	-
East	1.18	(0.12)
London	1.07	(0.10)
South East	1.07	(0.10)
South West	0.83	(0.09)
NI	1.08	(0.10)
Scotland	1.08	(0.10)
Wales	0.87	(0.09)
Guernsey, Jersey, & Isle of Man	1.16	(0.42)
Higher postgraduate degree	2.30***	(0.15)
Parent with professional job	1.18***	(0.05)
Private school	1.38***	(0.08)
UCAS tariff points	1.13***	(0.01)

*p<0.05; **p<0.01; ***p<0.001. Standard errors are corrected for finite population (266,720). Estimates weighted using HESA sampling weights

Appendix D: Interaction between university type/degree subject and social background

Figure D1. Mean graduate salary at 3.5 years by university type and parental occupation (adjusted)
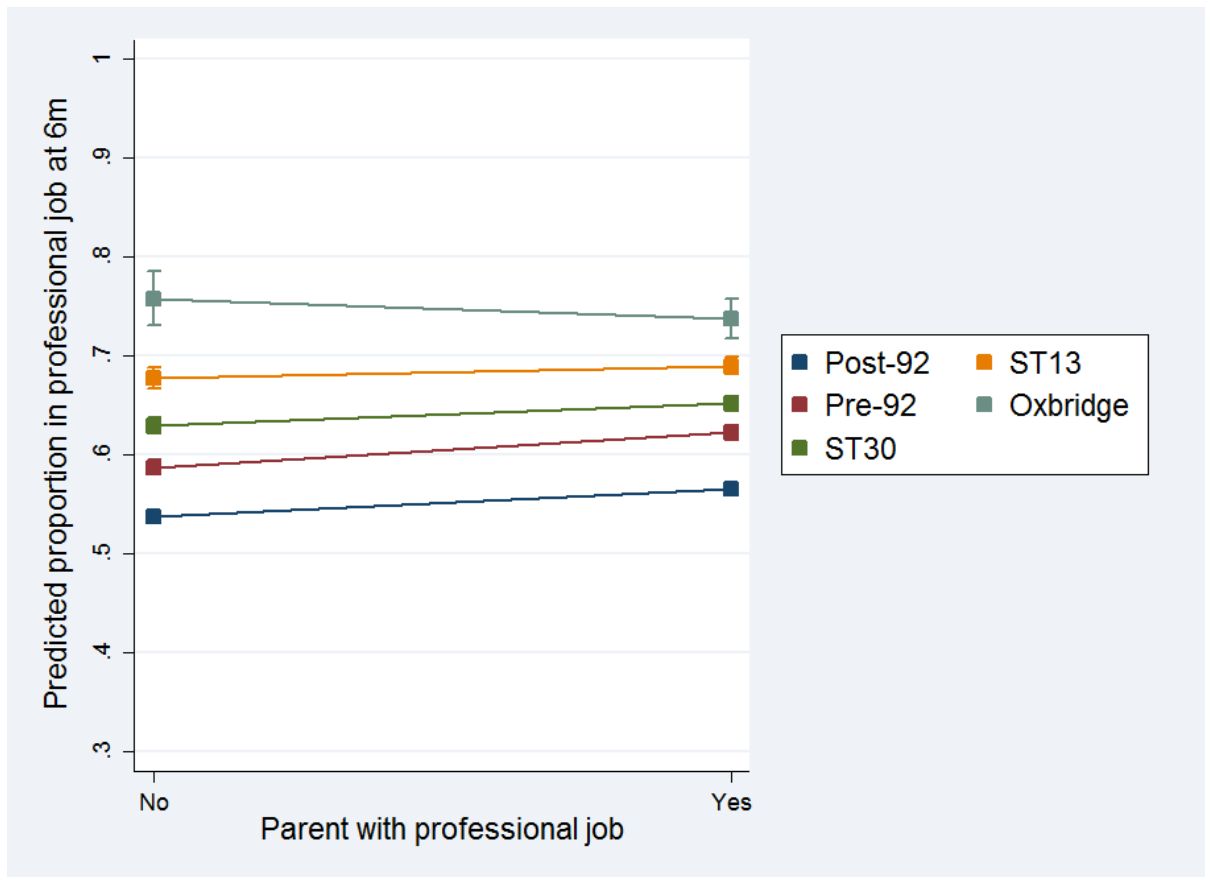

Note: Adjusted figures for all 2008/09 graduates in full-time work who had information on all relevant factors (N=9,330). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, private school attendance, and postgraduate education. Figures weighted using HESA sampling weights.

Figure D2. Mean graduate salary at 3.5 years by university type and school type (adjusted)

Note: Adjusted figures for all 2008/09 graduates in full-time work who had information on all relevant factors (N=9,330). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, and postgraduate education. Figures weighted using HESA sampling weights.

Figure D3. Proportion of graduates in professional jobs at 6 months, by university type and parental education (adjusted)
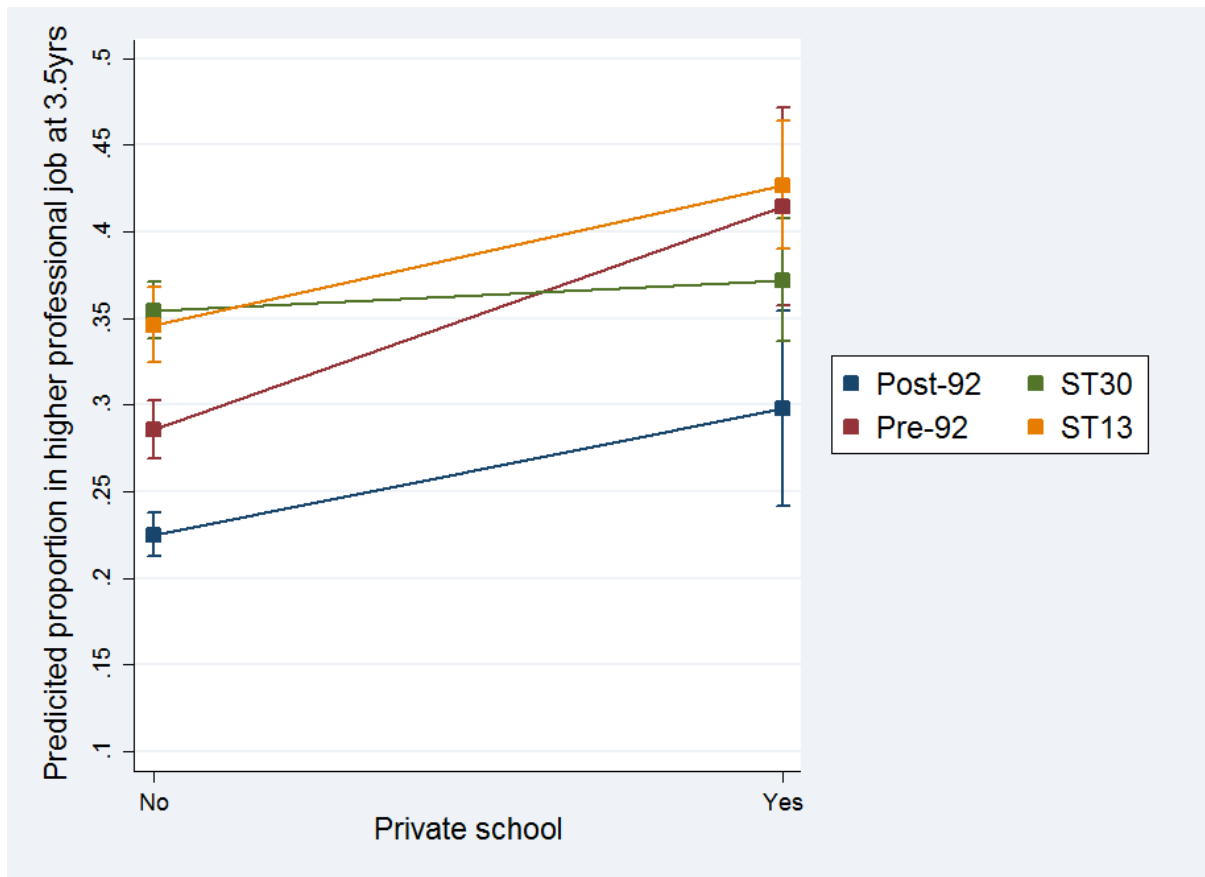

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals. Figures are adjusted for degree subject, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, and private school attendance

Figure D4. Proportion of graduates in professional jobs at six months, by university type and parental occupation (adjusted)
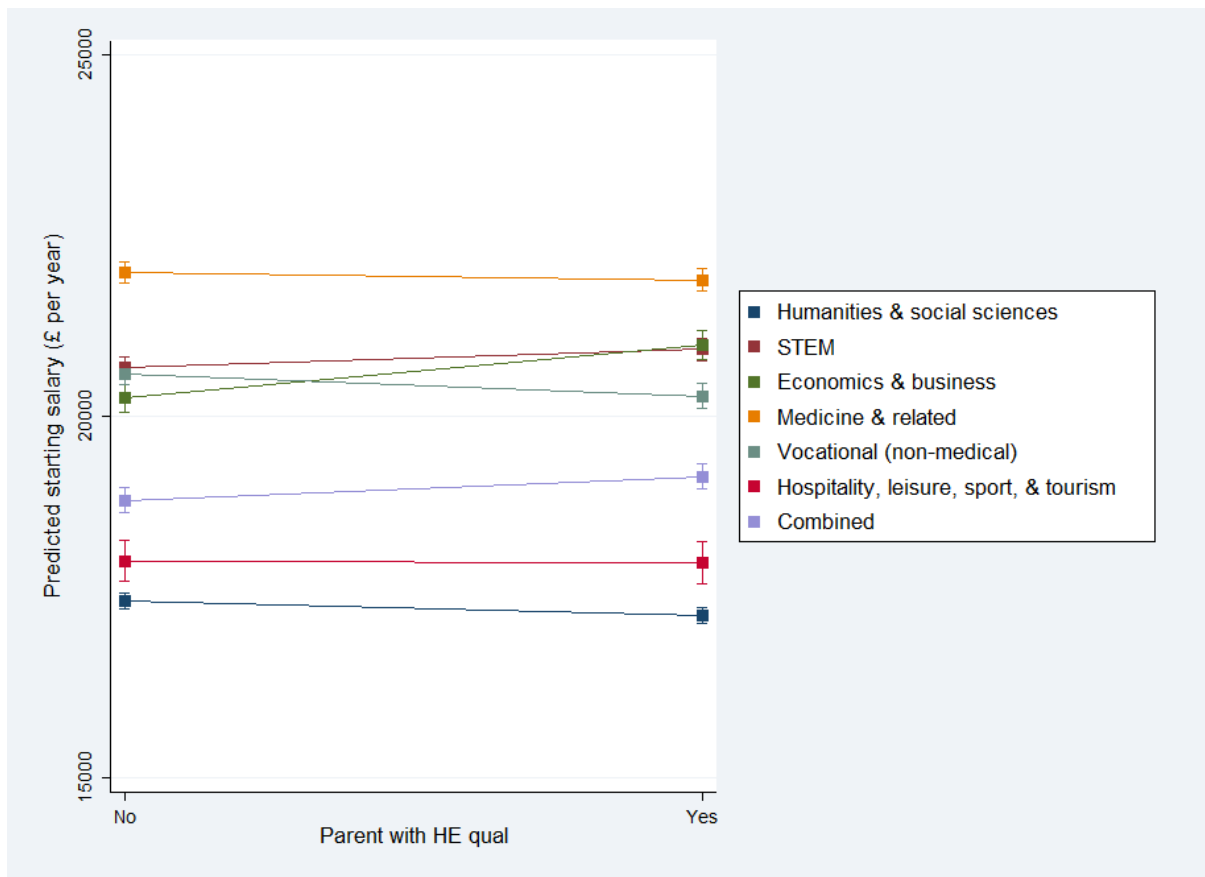

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals. Figures are adjusted for degree subject, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, and private school attendance

Figure D5. Proportion of graduates in professional jobs at 3.5 years, by university type and parental occupation (adjusted)
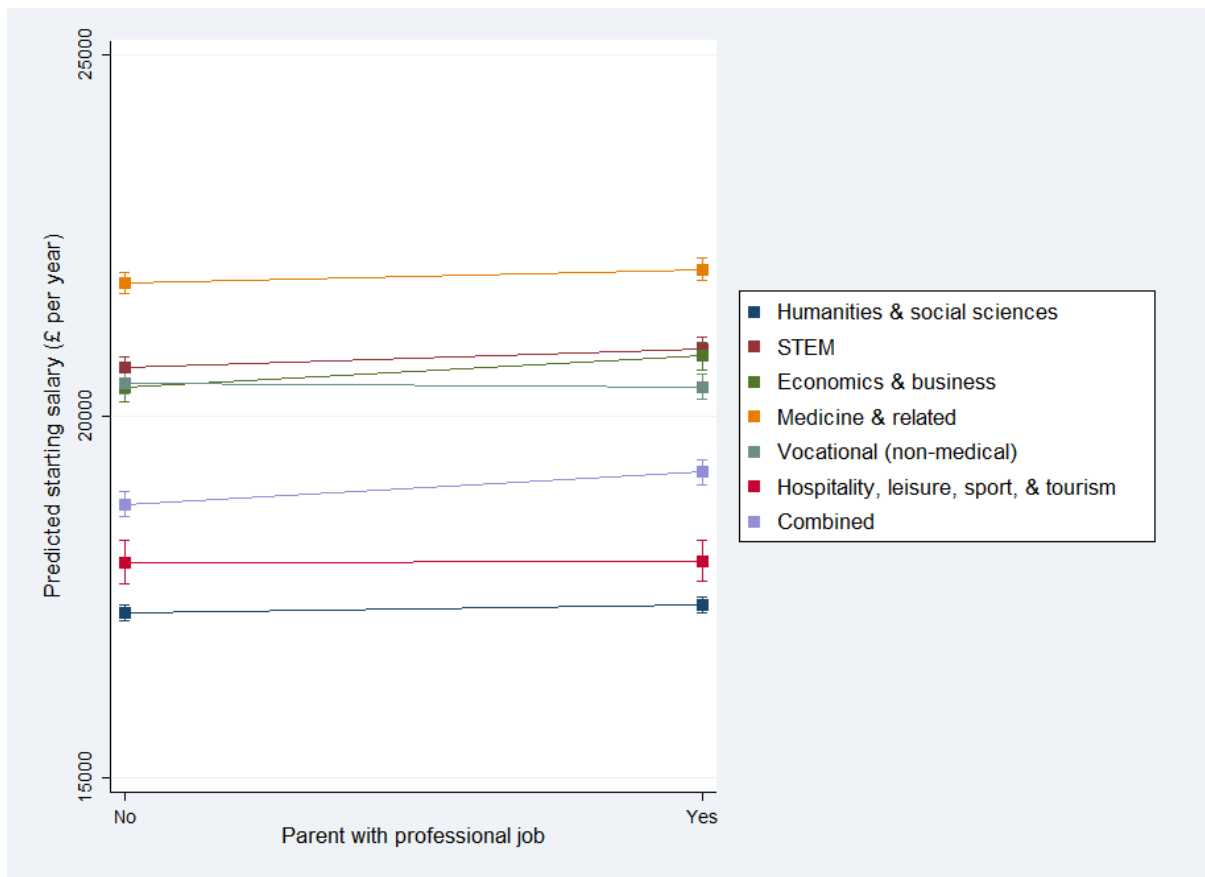

Note: Adjusted figures for all 2008/09 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=21,440). Error bars are 95% confidence intervals. Figures are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, private school attendance, and postgraduate education. Figures weighted using HESA sampling weights.

Figure D6. Proportion of graduates in professional jobs at 6 months, by university type and school type (adjusted)

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals. Figures are adjusted for degree subject, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, and parental occupation.

Figure D7. Proportion of graduates in professional jobs at 3.5 years, by university type and school type (adjusted)

Note: Adjusted figures for all 2008/09 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=21,440). Error bars are 95% confidence intervals. Figures are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, and postgraduate education. Figures weighted using HESA sampling weights.

Figure D8. Mean graduate starting salary by degree subject and parental education (adjusted)
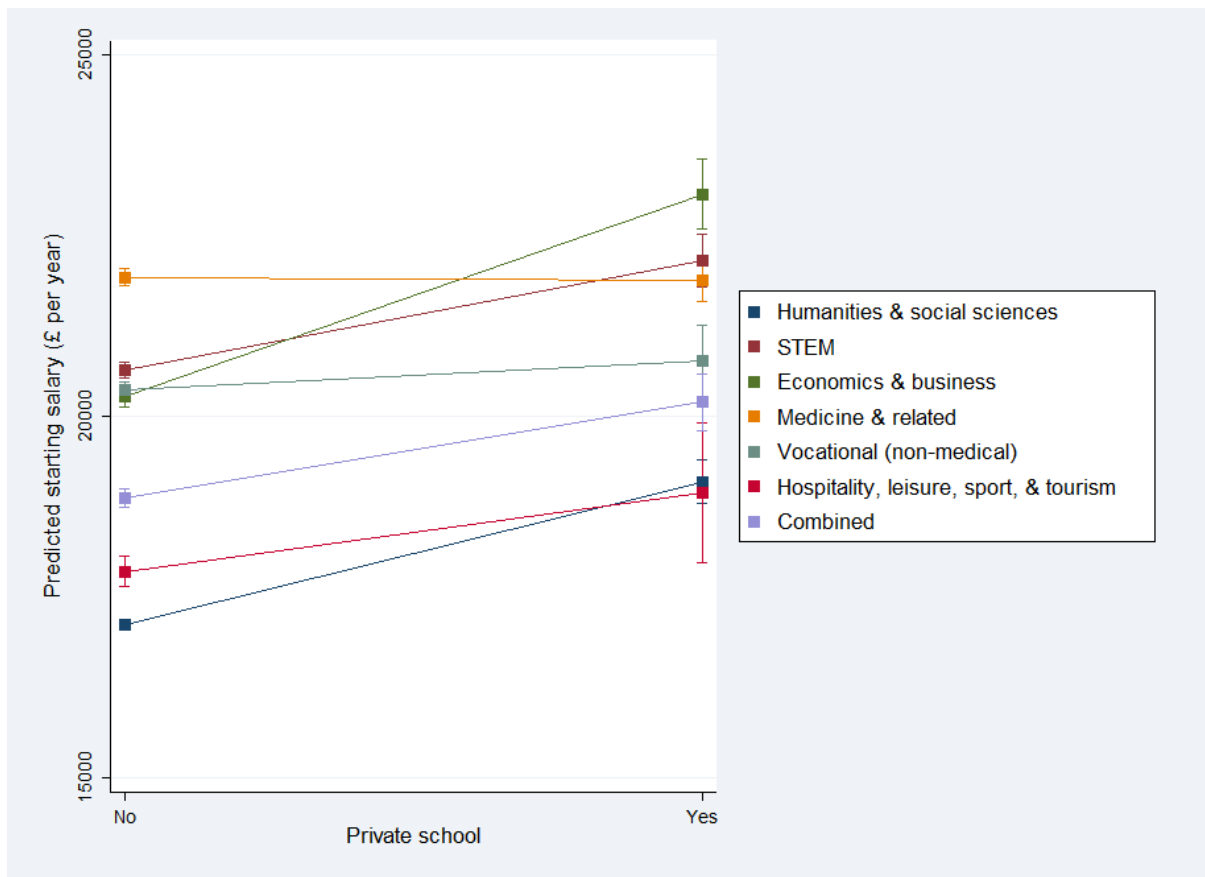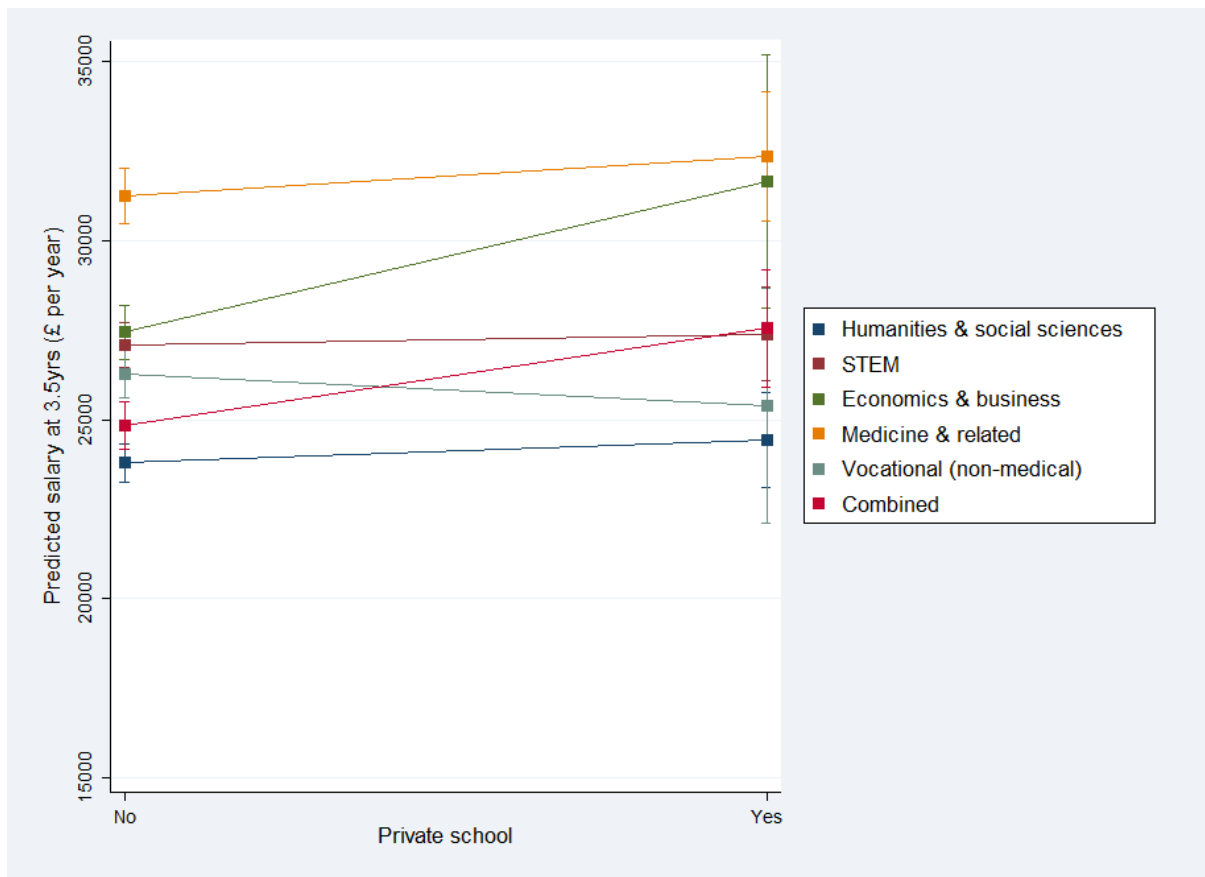

Note: Adjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Error bars are 95% confidence intervals. Salary estimates are adjusted for university type, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, and private school attendance.

Figure D9. Mean graduate starting salary by degree subject and parental occupation (adjusted)
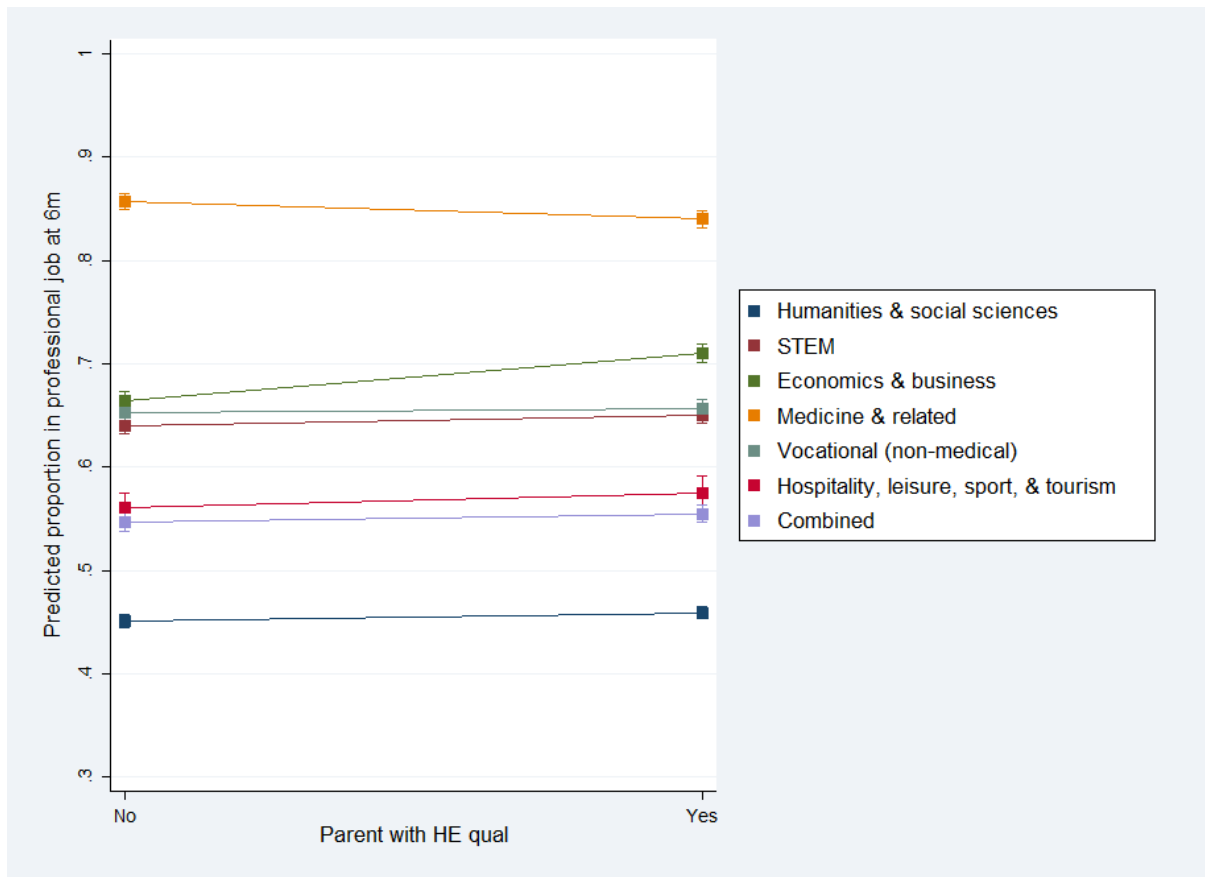

Note: Adjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Error bars are 95% confidence intervals. Salary estimates are adjusted for university type, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, and private school attendance.

Figure D10. Mean graduate salary at 3.5 years by degree subject and parental occupation (adjusted)

 Note: Adjusted figures for all 2008/09 graduates in full-time work who had information on all relevant factors (N=9,330). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, private school attendance, and postgraduate education. Figures weighted using HESA sampling weights.

Figure D11. Mean graduate starting salary by degree subject and school type (adjusted)

Note: Adjusted figures for all 2012/13 graduates in full-time work who had information on all relevant factors (N=53,720). Error bars are 95% confidence intervals. Salary estimates are adjusted for university type, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, and parental occupation.

Figure D12. Mean graduate salary at 3.5 years by degree subject and school type (adjusted)
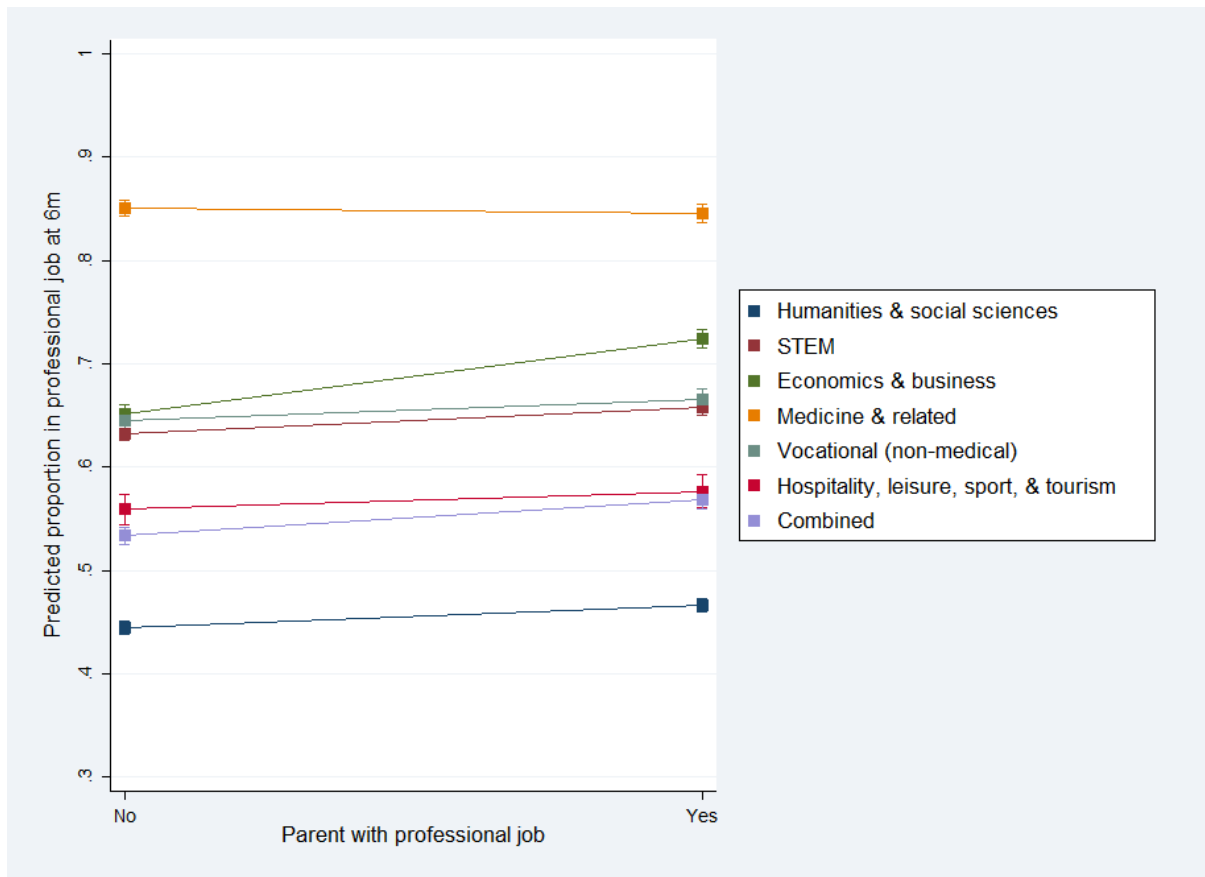

Note: Adjusted figures for all 2008/09 graduates in full-time work who had information on all relevant factors (N=9,330). Error bars are 95% confidence intervals. Salary estimates are adjusted for degree subject, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, and postgraduate education. Figures weighted using HESA sampling weights.

Figure D13. Proportion of graduates in professional jobs at 6 months, by subject and parental education (adjusted)
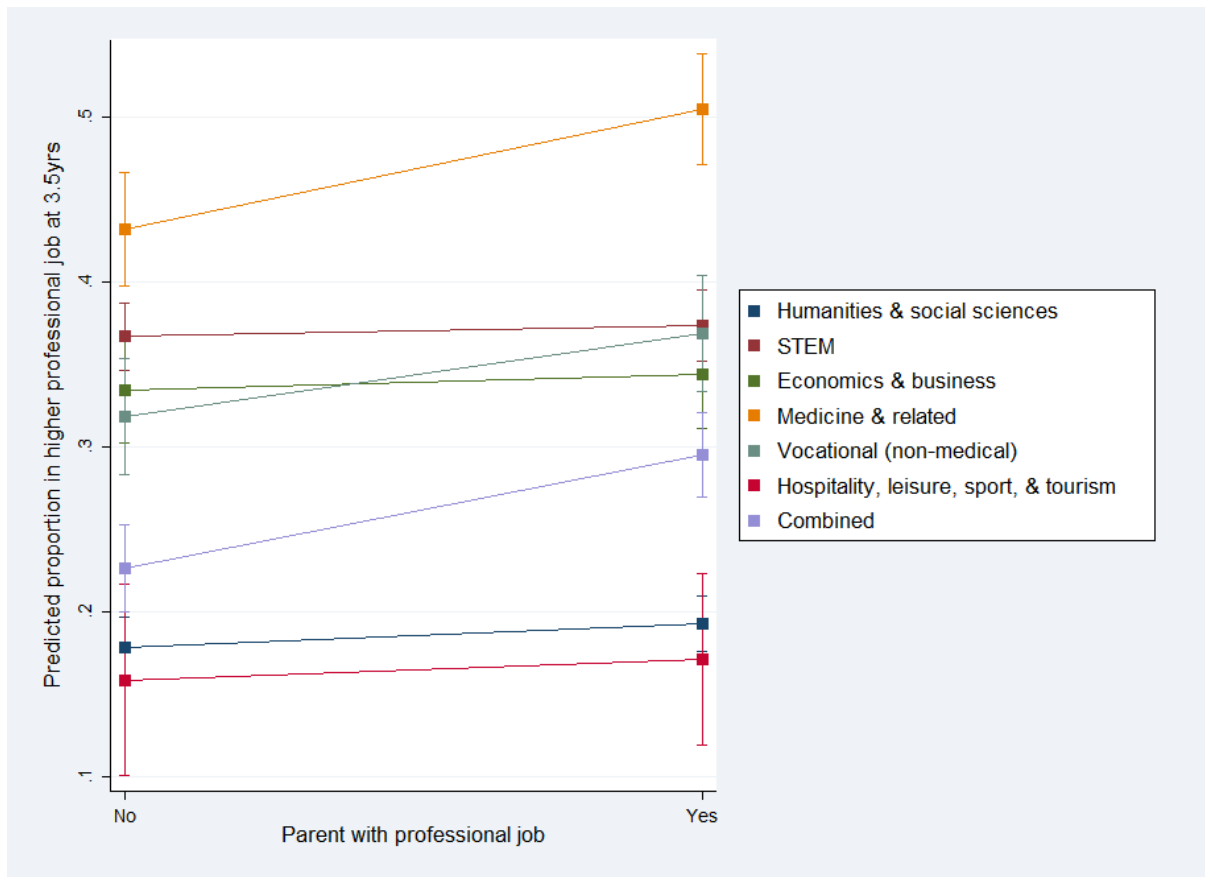

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals. Figures are adjusted for university type, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, and private school attendance.

Figure D14. Proportion of graduates in professional jobs at 6 months, by subject and parental occupation (adjusted)
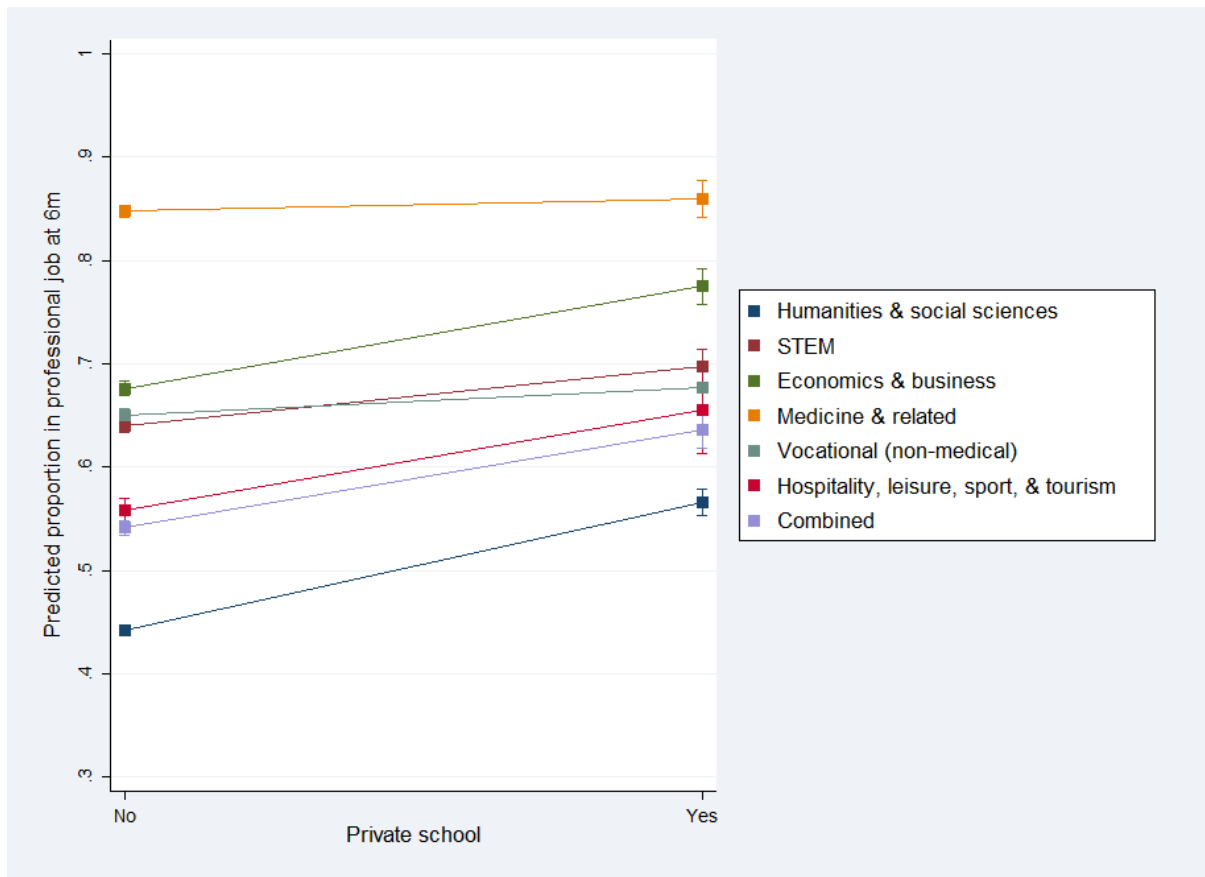

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals. Figures are adjusted for university type, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, and private school attendance.

Figure D15. Proportion of graduates in professional jobs at 3.5 years, by subject and parental occupation (adjusted)
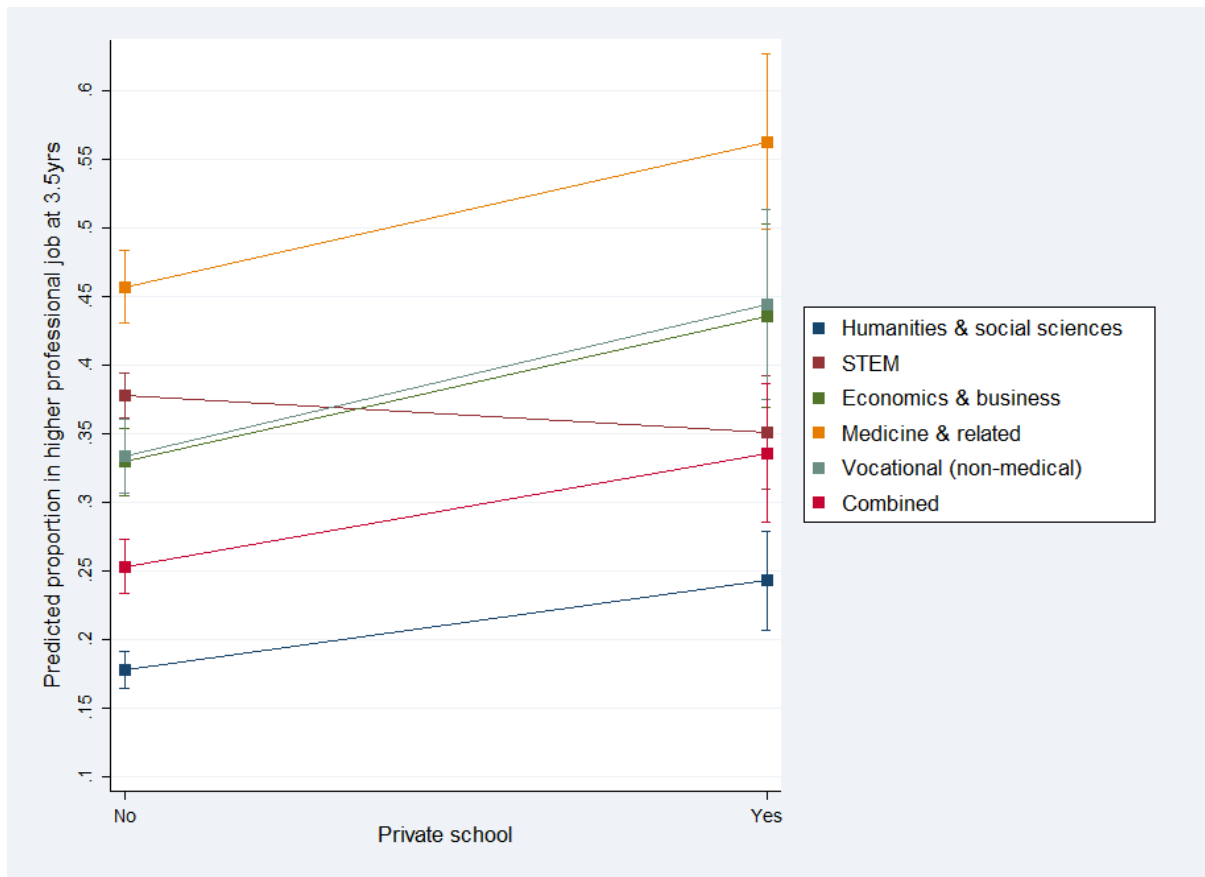

Note: Adjusted figures for all 2008/09 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=21,440). Error bars are 95% confidence intervals. Figures are adjusted for university type, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, private school attendance, and postgraduate education. Figures weighted using HESA sampling weights.

Figure D16. Proportion of graduates in professional jobs at 6 months, by subject and school type (adjusted)

Note: Adjusted figures for all 2012/13 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=111,535). Error bars are 95% confidence intervals. Figures are adjusted for university type, gender, mature student status, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental education, and parental occupation.

Figure D18. Proportion of graduates in professional jobs at 3.5 years, by subject and school type (adjusted)

Note: Adjusted figures for all 2008/09 graduates in full or part-time work, or who were unemployed, who had information on all relevant factors (N=21,440). Error bars are 95% confidence intervals. Figures are adjusted for university type, gender, age, domicile (Government Office Region), UCAS tariff score, study mode, degree classification, parental occupation, and postgraduate education. Figures weighted using HESA sampling weights.